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GEORGE CARDONA

PĀṆINI

HIS WORK AND ITS TRADITIONS

Volume One

Background and Introduction

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This is the first part of a study of Pāṇini's work, its antecedents, and the traditions of interpretation and analysis to which it gave rise. Subsequent volumes take up in detail issues of interpretation, method, and theory associated with Pāṇini's grammar. The present volume is meant to provide a basis for such detailed discussions. To this end, the author describes briefly the structure of Pāṇini's Aṣṭādhyāyī with its ancillaries, outlines Pāṇini's derivational system, and considers in general the principles that guided Pāṇini in composing his grammar in the manner he did as well as the grounds on which he arrived at the particular basic forms with which he operates in his derivational system.

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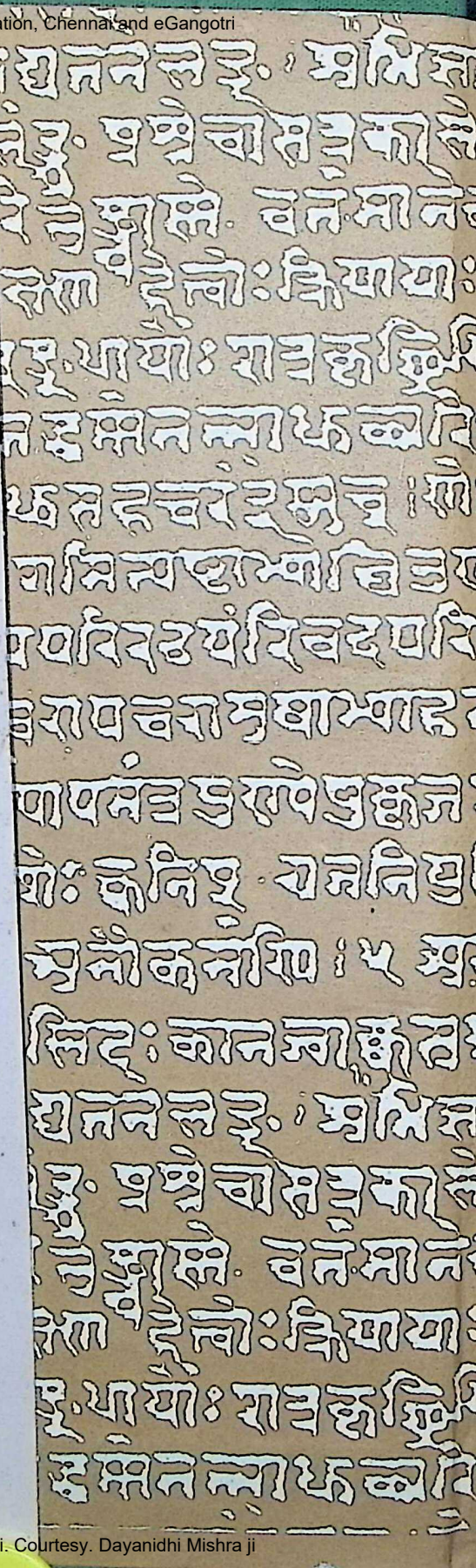

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PĀṆINI

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INTRODUCTION

This book is the first part of a large study in which I treat the work of Pāṇini and Pāṇinīyas. As a preliminary to this work, I covered a considerable amount of the secondary literature on the topic in a bibliographic survey published in 1976: *Pāṇini, a survey of research* (The Hague: Mouton; reprinted 1980, Delhi: Motilal Banarsidass).

In my study, I shall consider not only Pāṇini's Aṣṭādhyāyī with its ancillary texts but also a great part of the commentatorial literature that surrounds this treatise, starting with Kātyāyana's vārttikas as found in the Mahābhāṣya of Patañjali, in order to give a relatively full picture of the extensive and insightful thinking about language, centered upon Indo-Aryan languages but of more general interest to linguists and Indologists alike, found in these and related works.

The projected complete study of which the present volume is the first part is divided as follows:

I. Background and introduction.

II. Kinds of rules in the Aṣṭādhyāyī and how they are related.

III. Metalanguage: III.1. Paribhāṣāsūtras III.2. Saṁjñā-sūtras: Rules concerning general conventions and classes of elements other than markers or kārakas [Appendix: Sound classes recognized in prātiśākhya and śikṣā works] III.3. Saṁjñāsūtras: Markers III.4. Saṁjñāsūtras: kāraka classes.

IV. Affixation rules: IV.1. Verbal affixes IV.2. Nominal affixes.

V. Formation of derived bases: V.1: Derived verbs V.2. Derived nominals: V.2.1. Derivates with kṛt affixes V.2.2. Compounds V.2.3. Derivates with taddhita affixes.

VI. Rules providing for augments, replacements, and accentuation: VI.1. Verb suppletion VI.2. Iterating padas VI.3. Base and affix substitution and augmenting VI.4. Background for Pāṇini's phonological sūtras: Prātiśākhya rules VI.5. Sound replacement in general VI.6. Accentual rules.

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VII. Pāṇinian sūtras concerning dialects: VII.1. Vedic rules VII.2. Others.

VIII. Syntax and stylistics of the Aṣṭādhyāyī: VIII.1. Syntax of sūtras VIII.2. Stylistics VIII.3. Terminology.

In addition, there will be a complete index of Pāṇinian sūtras and of passages dealt with from works other than the Aṣṭādhyāyī. As can be seen from this outline, I shall consider not only works directly in the Pāṇinian traditions but also works of non-Pāṇinian traditions. Moreover, I plan to devote at least one separate volume to questions of semantics and "philosophy of grammar" in general, dealing with issues that have been considered in treatises such as Bhartṛhari's Vākyapadīya, Kauṇḍabhaṭṭa's Vaiyākaraṇabhūṣaṇa and its abridged version, the Vaiyākaraṇabhūṣaṇasāra, Nāgeśa's Vaiyākaraṇasiddhāntamañjūṣā with the Vaiyākaraṇasiddhānta-laghumañjūṣā and Vaiyākaraṇasiddhāntaparamalaghumañjūṣā, as well as in treatises whose principal concerns are not strictly grammar.

The bibliography connected with this field is already quite extensive, as one can readily see even from the sample given in my *Pāṇini, a survey of research,* and contributions continue to be made year by year. Were I to spend time dealing with this secondary literature, even if I did so in a cursory manner and selected for discussion only such works as I considered worthwhile, I would be unable to present, in the manner I wish to, my own thoughts about Pāṇini's work and how it has been interpreted both by Pāṇinīyas and in various other schools of Indian thought. Moreover, experience has shown me the wisdom of Hari's

अज्ञः सुखमाराध्यः सुखतरमाराध्यते विशेषज्ञः।
ज्ञानलवदुर्विदग्धं ब्रह्मापि नरं न रञ्जयति॥

Hence, in my own study I concentrate on the original texts of Pāṇini and other Indian thinkers. Done with the appropriate care and attention to nuances, this is quite enough to occupy a scholar for a lifetime. I trust, therefore, that readers will

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not be disappointed by or take offense at the absence of references to works by other modern scholars. I trust also that those who are expert in Pāṇinian grammar will accept the need for beginning a study like mine with a fairly rudimentary volume such as this one, in which I deal with a representative part of Pāṇini's grammar and its ancillaries in order to show the general structure of his work and how Pāṇini's system operates. A general background has to be set forth to allow discussing in detail procedures, principles, and problems as dealt with by Pāṇini and his successors. The very nature of this first volume also has made it inadvisable, in my opinion, to include in it an index locorum. The extensive cross references make it possible for the reader always to get back to where a particular sūtra is first introduced and explained, and the table of contents is sufficiently detailed to allow me to dispense with a full index. Of course, the explanations given here are brief: Full discussions of various interpretations, with arguments presented by various Pāṇinīyas, will appear in subsequent volumes.

Some portions of the complete work outlined above have been in typescipt and draft form for several years, and I distributed copies to several scholars in 1970, 1976, 1977, and 1979. I hope that I shall now be able to complete subsequent parts more quickly, so that the entire work will be completed in a reasonable time.

I am happy to acknowledge the generous help I have received in working on this volume and others. Over the years, from 1969 on, I have received financial aid from the American Council of Learned Societies, the National Science Foundation, the National Endowment for the Humanities, and the American Insitute of Indian Studies, and in 1971-1972 I was able to spend a delightful and fruitful year at the Center for Advanced Study in the Behavioral Sciences in Palo Alto. To all of these I express my sincere gratitude.

My former students Madhav M. Deshpande, Jayashree A. Gune, Peter E. Hook, Kusum Jain, Dayashankar M. Joshi, Ivan A.

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Sag, Frederick M. Smith, Elliot M. Stern, and Kapil Muni Tiwary have helped me during many discussions from which I gained insights. My colleague Hans Henrich Hock has read parts of my work. In addition, during the summer of 1978, while I was at the University of Illinois, I profited from direct discussions with him. To Ramanath Sharma and his father Raghunath Sharma (Raghunātha Śarmā) I owe more than can be put into words. Over a stretch of over ten years, Pandit Raghunath Sharma has more than generously shared his enormous erudition with me. His son and my friend Ramanath has always cheerfully read what I have written and given a great deal of time to sharing his thoughts about this with me, to my benefit. My current students Timothy Cahill and Peter Scharf have done me the great favor of reading through the present volume with diligent care, thus helping me to clarify quite a few passages and to avoid several errors. I also cannot fail to mention my indebtedness to Ashok N. Aklujkar. Not only have I gained enormously from discussions over the years with this most erudite vaiyākaraṇa, I also received his technical assistance. The text of this volume was set up on an Apple Macintosh computer with software that includes a Devanāgarī font elaborated by Ashok and his colleagues at the University of British Columbia. Ashok cooperatively came to my aid when I needed it most. Finally, I am happy to thank Dhanesh K. Jain, who invited me to contribute this volume for publication by Motilal Banarsidass, then waited patiently for nine years while I reworked it several times, and Narendra Prakash Jain, who graciously cooperated in seeing to the publication of this work. All these students, colleagues, and friends have my deep and lasting gratitude.

My greatest intellectual and spiritual debt, of course, is to my teachers in this area of study. One of these I have already mentioned. To the memory of another, my very first Indian teacher, Jagannātha S. Pade Śāstrī, who introduced me to the traditional study of Pāṇinian grammar and other śāstras, I gratefully dedicate this volume, knowing well that a

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truly learned yet modest scholar such as he would appreciate the effort that has gone into this work, select from it what is worthwhile, and forgive its faults:

विद्वानेव विजानाति विद्वज्जनपरिश्रमम्।
नहि वन्ध्या विजानाति गुर्वीं प्रसववेदनाम्॥
प्राज्ञो हि जल्पतां पुंसां श्रुत्वा वाचः शुभाशुभाः।
गुणवद्वाक्यमादत्ते हंसः क्षीरमिवाम्भसः॥

Philadelphia
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REFERENCES AND ABBREVIATIONS

[Note: For bibliographic details concerning works listed below by editor and date of publication only, see *Pāṇini, a survey of research.*]

A: Pāṇini's Aṣṭādhyāyī. [adhyāya, pāda, sūtra; see 12]
AiBr.: Aitareyabrāhmaṇa.
AiU: Aitareyopaniṣad.
ĀpŚS: Āpastambaśrautasūtra.
Bāl.: Vāsudeva Dīkṣita's Bālamanoramā. Giridhara Śarmā Caturveda-Parameśvarānanda Śarmā Bhāsakra 1958-1961. (Reprinted 1967-1975) [volume, page]
BĀU: Bṛhadāraṇyakopaniṣad.
Bh., Bhāṣya: Patañjali's Mahābhāṣya. K.V. Abhyankar 1962-1972. [volume, page, line]
BhV: Puruṣottamadeva's Bhāṣāvṛtti. Dwarikadas Shastri 1971.
BhVŚS: Bhāradvājaśrautasūtra, edited by C. G. Kashikar. Poona: Vaidika Saṁśodhana Maṇḍala, 1964.
Chāyā: Vaidyanātha's Chāyā. Bhārgavaśāstrī Bhikāji Joshi 1951. [page, column]
Daiva: Deva's Daiva. Yudhiṣṭhira Mīmāṁsaka 1962/3.
Darpaṇa: Harivallabha's Darpaṇa on the Vaiyākaraṇabhūṣaṇa-sāra. Tārakeśvara Śāstrī Caturvedī 1947. [page]
DhPr.: Maitreya Rakṣita's Dhātupradīpa. Shrish Chandra Chakravarti 1919. [page]
Dīpikā: Bhartṛhari's Mahābhāṣyaṭīkā. K. V. Abhyankar-V. P. Limaye 1967-1969. [page, line]
GDhS: Gautamadharmasūtra.
GRM: Vardhamāna's Gaṇaratnamahodadhi. Eggeling 1879-81.
Hem.: Hemacandra's Siddhahemaśabdānuśāsana.
JNMV: Jaiminīyanyāyamālāvistara. [verses and commentary according to adhyāya, pāda, adhikaraṇa]
JS: Jaiminisūtra.
Kāś.: Kāśikāvṛtti. Aryendra Sharma-Khanderao Deshapande-D. G Padhye 1969-1970. [sūtra, volume, page]

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Kāt.: Kātantravyākaraṇa.

KBr.: Kauṣītakibrāhmaṇa. E. R. Sreekrishna Sarma: Kauṣītaki-Brāhmaṇa. 1. Text, 2-3. Vyākhyā of Udaya. Wiesbaden: Steiner, 1968, 1976.

KDhV: Cannavīrakavi's Kāśakṛtsnadhātuvyākhyāna. Yudhiṣṭhira Mīmāṁsaka 1965/6a.

KŚS: Kātyāyanaśrautasūtra.

KṢT: Kṣīrasvāmin's Kṣīrataraṅgiṇī. Yudhhiṣṭhira Mīmāṁsaka 1957/8 [verbs, sūtras]

LM: Nāgeśa's Vaiyākaraṇasiddhāntalaghumañjūṣa. Mādhava Śāstrī Bhāṇḍārī-Madan Mohan Pāṭhak-Nityānand Panta Parvatīya 1926. [page]

Manu: Manusmṛti.

MBh.: Mahābhārata.

MDhV.: Sāyaṇa's Mādhavīyadhātuvṛtti. Dwarikadas Shastri 1964. [verbs, sūtras]

MU: Muṇḍakopaniṣad.

Nir.: Yāska's Nirukta. Sarup 1927.

NKāś.: Nandikeśvara's Kāśikā. Bhārgavaśāstrī Bhikājī Joshi 1951, pp. 148-151.

NS: Nyāyasūtra. Nyāyadarśanam with Vātsyāyana's Bhāṣya, Uddyotakara's Vārttika, Vācaspati Miśra's Tātparyaṭīkā and Viśvanātha's Vṛtti, edited by Taranatha Nyaya-Tarkatirtha, Amarendramohan Tarkatirtha, and Hemantakumar Tarkatirtha. 2 volumes. (Calcutta Sanskrit Series 18, 29). Calcutta, 1936-1944. Reprinted, 1982: Kyoto: Rinsen Book Co. For the first adhyāya: Nyāya-darśana of Gautama with the Bhāṣya of Vātsyāyana, the Vārttika of Uddyotakara, the Tātparyaṭīkā of Vācaspati, and the Pariśuddhi of Udayana, edited by Anantalal Thakur. (Mithila Institute Series, Ancient Text No. 20). Darbhanga: Mithila Institute, 1967.

NV: Nyāyavārttika; see NS.

Nyāsa: Jinendrabuddhi's Kāśikāvivaraṇapañjikā. Dwarikadas Shastri-Kalika Prasad Shukla 1965-1967. [volume, page]

Nyāyasudhā: Nyāyasudhā, A commentary on Tantravārtika by

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Paṇḍit Someśwara Bhaṭṭa, edited by Paṇḍit Mukunda Śāstrī. Banaras: Chowkhamba, 1901-1909. [fascicle, page]

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Pathak-Chitrao: Shridhar Shastri Pathak-Siddheshvar Shastri Chitrao 1935.

PlŚ: Nāgeśa's Paribhāṣenduśekhara. K.V. Abhyankar 1962. [paribhāṣā number; page of commentary]

PLM: Paramalaghumañjūṣā. Kapila Deva Śāstrī, **नागेशभट्ट-कृत वैयाकरणसिद्धान्तपरमलघुमञ्जूषा (मूलग्रन्थ, अनुवाद एवं समीक्षात्मक व्याख्या).** Kurukshetra: Kurukshetra University, 1975. [Where appropriate, I silently correct according to the manuscript evidence used for my critical edition, now in preliminary script.]

PM: Haradatta's Padamañjarī. Dwarikadas Shastri-Kalika Prasad Shukla 1965-1967. [volume, page] [I have also consulted the more recent edition by P. Sri Ramachandrudu and V. Sundara Sarma: Padamañjarī by Sri Haradatta Miśra, A commentary on Kāśikā of Vāmana and Jayāditya. (Sanskrit Academy Series 25, 26). 2 volumes. Hyderabad: Sanskrit Academy, Osmania University, 1981.]

Pr.: Kaiyaṭa's Pradīpa. Vedavrata 1962-1963. [volume, page]

PrK: Rāmacandra's Prakriyākaumudī: K. P. Trivedi 1925-1931. [volume, page]

PŚ: Pāṇinīyaśikṣā: Manomohan Ghosh 1938, Rudra Prasāda Śarmā 1947/8. (Reprinted 1972)

PS: Paribhāṣāsaṁgraha. K. V. Abhyankar 1967.

Puruṣakāra: Commentary on the Daiva; see Daiva.

PV: Puruṣottamadeva's Laghuparibhāṣāvṛtti. PS pp. 112-160.

RA: Dharmakīrti's Rūpāvatāra: M. Rangacharya-M. B. Varadrajiengar 1916-1927. [volume, page]

RaPr.: Śivarāmendra Sarasvatī's Ratnaprakāśa on the Mahābhāṣya, in Mahābhāṣya Pradīpa Vyākhyānāni, edited by M. S. Narasimhacharya. 10 volumes. (Publications de l'Institut Français d'Indologie No. 51,1-51,10). Pondichéry:

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1973-1983. [volume, page]

RV: Ṛgveda.

ŚBr.: Śatapathabrāhmaṇa.

ŚlŚ: Nāgeśa's Laghuśabdenduśekhara, edited with Bhairava's Candrakalā by Gopāla Śāstrī Nene: महामहोपाध्यायभट्ट-नागेशकृतोलघुशब्देन्दुशेखरःश्रीमद्भैरवमिश्रविरचित 'चन्द्रकला'ख्यटीकया सहितः। (KSS 5). 2 volumes. Varanasi: Chowkhamba, 1911, 1922. [volume, page]

ŚK.: Bhaṭṭoji's Śabdakaustubha. Vindhyeśvarī Prasāda Dvivedī-Gaṇapati Śāstrī Mokāṭe-Gopāl Śāstrī Nene-Mukund Śāstrī Puṇtamkar 1917-1933. [volume, page]

ŚV: Kumārila's Ślokavārttika. Ślokavārttika of Śrī Kumārila Bhaṭṭa with the commentary Nyāyaratna of Śrī Pārthasārathi Miśra, edited and revised by Dvārikādāsa Śāstrī. (Prāchyabhāratī Series 10.) Varanasi: Tara Publications, 1978.

SK: Bhaṭṭoji's Siddhāntakaumudī. Giridhar Śarmā-Parameśvarānanda's 1958-1961. (Reprinted 1967-1975) [sūtra, volume, page]

Skandasvāmin-Maheśvara: Sarup 1927b-1934. Republished with additions and corrections by Acharya V. P. Limarye, Delhi: Panini, 1982. [volume, page]

TBr.: Taittirīyabrāhmaṇa.

TPr.: Taittirīyaprātiśākhya. The Taittirīya-Prātiśākhya with the commentaries Tribhāṣyaratna and Vaidikābharaṇa, edited by R. Shama Sastri and K. Rangacarya. Mysore, 1906. Reprinted 1985, Delhi: Motilal Banarsidass.

TS: Taittirīyasaṁhitā.

TU: Taittirīyopaniṣad.

Ud.: Nāgeśa's Udyota on Kaiyaṭa's Pradīpa. Vedavrata 1962-1963. [volume, page]

Udd.: Annambhaṭṭa's Uddyotana on Kaiyaṭa's Pradīpa, in Mahābhāṣya Pradīpa Vyākhyānāni; see under RaPr. [volume, page]

Uṇādikośa: Mahādeva Vedāntin's Uṇādikośa. K. Kunjunni

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Raja 1956a.

US: Uṇādisūtra. Aufrecht 1859,

VBh.: Kauṇḍabhaṭṭa's Vaiyākaraṇabhūṣaṇa. K. P. Trivedī 1915

VBhS: Kauṇḍabhaṭṭa's Vaiyākaraṇabhūṣaṇasāra; see Darpaṇa.

VP: Bhartṛhari's Vākyapadīya. Wilhelm Rau, Bhartṛharis Vākyapadīya. Die Mūlakārikās nach den Handschriften herausgegeben und mit einem Pāda-Index versehen. (Abhandlungen für die Kunde des Morgenlandes XLII,4.) Wiesbaden: Steiner, 1977. [References to kārikās are according to this edition, even where this conflicts with the numbering in editions with the Vṛtti and other commentaries.]

VPP: Vyāsaparibhāṣāpāṭha, in PS.

VPr.: Vājasaneyiprātiśākhya. Vīrendra Kumāra Varmā, भाष्य-द्वयसहितम् शुक्लयजुर्वेद-प्रातिशाख्यम् अथवा वाजसनेयि-प्रातिशाख्यम्. Varanasi: Jñānaprakāśa Pratiṣṭhāna, 1975.

Vṛtti: Bhartṛhari's autocommentary. K. A. Subramanya Iyer 1966a [page, line], Raghunātha Śarmā 1963 [page]

VS: Vājasaneyisaṁhitā.

vt.: vārttika.

YS: The Yogasūtras of Patañjali with the scholium of Vyāsa and the commentary of Vācaspatimiśra, edited by Rajaram Shastri Bodas; revised and enlarged by the addition of the commentary of Nāgojī Bhaṭṭa by Vasudev Shastri Abhyankar. (Bombay Sanskrit and Prakrit Series no. XLVI.) Bombay: The Department of Public Instruction, 1917.

YSBh.: Yogasūtrabhāṣya. See YS. [page]

YSm.: Yājñavalkyasmṛti.

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ON NOTATION AND CROSS REFERENCES

I have generally followed the most widely accepted sytem for transliterating Devanāgarī. I have also distinguished between *ṁ* and *ṃ̐*, using the former for the nasal offglide called *anusvāra* and the latter to indicate nasalization; for example, *vaṁśaḥ, sayṃyogaḥ, bhavāṃ̐s* correspond to Devanāgarī वंशः, सँय्योगः, भवाँस्. In some instances, it is necessary to distinguish in transliteration between the diphthongs *ai, au* and sequences of vowels that are not separated by any grammatical boundary; I have used the diaeresis to designate second segments of such complexes: *aï, aü*. Except in sections where the topics under discussion call for marking accents and in Vedic citations, I have left Sanskrit items unmarked for accentuation. Moreover, even in Vedic citations, I have followed general practice and marked only udātta vowels, except where the discussion calls also for marking svarita vowels. For transliterating passages from the Śatapathabrāhmaṇa, on the other hand, I have departed from the general western practice. In accordance with the bhāṣika accent system as set forth in the Bhāṣikasūtras and reflected in Indian editions, I have only marked anudātta vowels, by means of underlined vowel symbols, reflecting the use of a substroke to indicate an anudātta vowel in the original text; for example, *vratam upaiṣyannantareṇāhavanīyañ ca gārhapatyañ ca prāṅ tiṣṭhannapa upa spṛśati* | (ŚBr. 1.1.1.1) for व्रतमुपैष्यन्नन्तरेणाहवनीयञ्च गार्हपत्यञ्च प्राङ् तिष्ठन्नप उपस्पृशति।

I have used bold face italics to indicate markers (*it, anubandha*) appended to Sanskrit elements, which appear transliterated in italics; for example, ***ḍupacaṣ*** and ***ḍukṛñ*** are the verbal bases *pac* and *kṛ* with the appended markers ***ḍu, a, ṣ, ñ***; ***ṇvul*** and ***tṛc*** are the affixes *vu* and *tṛ* with the markers ***ṇ, l, c***; ***ac*** and ***tiñ*** are abbreviatory terms consisting of the vowel *a* with the marker *c* and the verbal ending *ti*

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with the marker ṁ.

Let me note also that, because at the time I first composed this book with computer software the program available did not have the symbols '→' and '←', I used '>' and '<', usually reserved for historical derivations, to show stages of Pāṇinian derivations. In future parts of my work, '→' and '←' will be used.

For purposes of cross reference, I have divided the text of this book into subsections marked by boldface numerals in the left hand margin. I refer to these in the body of the text by means of boldface numerals in parentheses.

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1. PĀṆINI'S WORK

1.0. Introduction.

1 Pāṇini is the author of a grammar describing a language current in his time and place: approximately 500 B.C. in the northwest of the Indian subcontinent. The language he describes is a form of early Indo-Aryan: **Sanskrit** (*saṁskṛta*). Pāṇini composed his work in Sanskrit, and he could assume of his audience --- all members of which must have been native speakers of this language --- a knowledge of conventions of use known to him and to all other native speakers from their own usage. The core of Pāṇini's grammar is a set of statements called *sūtra*: the sūtra text (*sūtrapāṭha*) known as the **Aṣṭādhyāyī**. This text is accompanied by three ancillary texts: Pāṇini's **akṣarasamāmnāya**, **dhātupāṭha**, and **gaṇapāṭha**. The first of these is an ordered set of sounds (*akṣara*). The second is a catalog of verbs (*dhātu*). The last ancillary consists of sets (*gaṇa*) of other items pertinent to provisions made in particular sūtras; these groups of elements originally were given along with such sūtras.

2 In his description, Pāṇini takes dialect features into account, noting usages particular to northerners (*udīcām* 'of northerners') and easterners (*prācām*). He also mentions observations of teachers (*ācāryāṇām*) and refers to ten scholars by name: **Āpiśali**, **Kāśyapa**, **Gārgya**, **Gālava**, **Cākravarmaṇa**, **Bhāradvāja**, **Śākaṭāyana**, **Śākalya**, **Senaka**, **Sphoṭāyana**. Further, Pāṇini accounts for features particular to a more archaic form of Indo-Aryan, known to him from Vedic literature, both in general (*chandasi* 'in sacred literature') and as concerns specific Vedic traditions and works.

3 According to **Pāṇinīyas** (students of Pāṇini's work) such as **Patañjali**, the language Pāṇini describes is the speech of persons referred to as *śiṣṭa*, an élite of model speakers

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characterized as much by their moral qualities as by their language (see 834). It is most plausible to consider that in Pāṇini's time the language he used and described in his grammar was the major vehicle of learned discourse and ritual in use among members of a community, wide spread through the north of the subcontinent, that constituted a linguistic and social élite, and that this language then coexisted --- as Sanskrit did in later times --- with vernaculars used in less formal circumstances and by other speakers.

4 It is known that Pāṇini had predecessors in the field of grammar (*vyākaraṇa*). The Aṣṭādhyāyī is not the first grammatical treatise on Sanskrit to have been composed in ancient India. Although Pāṇini built on the work of grammarians (*vaiyākaraṇa*) who preceded him, however, no earlier work comparable in scope to the Aṣṭādhyāyī has been preserved in full. Pāṇini's grammar is the earliest complete treatise of its kind to have been preserved.

Remarks.

5 1. The availabe evidence does not allow one to determine Pāṇini's dates with absolute precision. Nevertheless, the evidence also precludes placing Pāṇini at a time later than the early fourth century B.C.: 500 B.C. is a reasonable date to accept. According to a tradition which there is no cogent reason to doubt, Pāṇini was native to Śalātura, in the northwest of the subcontinent. Thus, in his Gaṇaratnamahodadhi (GRM 1.2: शालातुरीयशकटाङ्गज-चन्द्रगोमिदिग्वस्त्रभर्तृहरिवामनभोजमुख्याः। मेधाविनः प्रवर-दीपककर्तृयुक्ताः प्राज्ञैर्निषेवितपदद्वितया जयन्ति॥) Vardhamāna uses *śālāturīya* in speaking of Pāṇini, and in his commentary on the passage in question he explains (शलातुरो

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नाम ग्रामः सोऽभिजनोऽस्यास्तीति शालातुरीयस्तत्रभवान् पाणिनिः) that this term refers to the respected Pāṇini (*tatrabhavān pāṇiniḥ*), whose ancestral place was the village Śalātura. See A 4.3.90, 94 (344, 345).

6 2. The Sanskrit term for grammar in general is **vyākaraṇa**. Pāṇini's complete treatise is also known as a **śabdānuśāsana**, since it is a means of instruction (*anuśāsana*) whose object is correct speech forms (*śabda*). The term *aṣṭādhyāyī* ('eight chapters', see 9), first used of Pāṇini's sūtra text in Patañjali's **Mahābhāṣya** (III.174.10-15, see 834e), refers to this corpus as composed of eight chapters. Statements of Pāṇini's grammar are called not only *sūtra* but also *śāstra, yoga,* and *lakṣaṇa* (see 849-853). In addition, the fourteen subgroups of sounds that make up Pāṇini's akṣarasamāmnāya are called *sūtra* (see 131).

7 3. In the Aṣṭādhyayī, Pāṇini uses *bhāṣāyām* ('in spoken language') opposed to *chandasi* ('in sacred literature'), but he does not refer to the language he describes by terms such as *saṁskṛtam* or *saṁskṛtā vāk* ('adorned, purified speech'). He has no need for such terms in the context of his particular grammatical statements.

8 4. As I pointed out above (see 1), the dhātupāṭha and the gaṇapāṭha both contain ordered groups of items. Pāṇinīyas use the term *gaṇa* with reference to groups in both these ancillary texts, but *gaṇapāṭha* is conventionally used of the particular text noted.

1.1. Pāṇini's sūtrapāṭha: the Aṣṭādhyāyī.

1.1.0. Introduction.

9 Pāṇini's Aṣṭādhyāyī contains nearly four thousand sūtras, distributed among eight chapters (*adhyāya*), each of which is subdivided into four quarter-chapters (*pāda*). The text begins

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with two rules that assign class names to certain sounds:

A 1.1.1: **वृद्धिरादैच्।** (*vṛddhir ād aic*)

A 1.1.2: **अदेङ् गुणः।** (*ad eṅ guṇaḥ*)

The first of these sūtras provides that *ā*-, *ai*-, and *au*-vowels (*āt, aic*: A 1.1.71, 69, 70 [83-85]) have the class name (*saṁjñā*) *vṛddhi*; the second sūtra provides that *a*-, *e*-, and *o*-vowels (*at, eṅ*) are called *guṇa*. According to the organization of Pāṇini's work, then, these are the first and second sūtras of the first pāda in the first adhyāya of the Aṣṭādhyāyī.

10 Sūtras serve different purposes and are thereby of different kinds. There is a major distinction between operational rules (**vidhisūtra**) and other, ancillary rules. The former are directly concerned with operations in respect of elements; ancillary rules, on the other hand, serve to allow the required interpretation and application of other rules. Ancillary sūtras are of three main types: **saṁjñāsūtra**s, which introduce class names and establish conventions regarding the use of terms; metarules (**paribhāṣā**); and headings (**adhikāra**). Further, some sūtras provide that properties and operations which would otherwise not pertain to given elements are extended to these under given conditions; such sūtras are extension rules (**atideśasūtra**). In addition, Pāṇini's work includes restrictive rules (**niyamasūtra**), which serve to restrict what would otherwise obtain too broadly, and rules of negation (**pratiṣedhasūtra**, **niṣedhasūtra**), whereby something that would otherwise apply is disallowed.

11 The sūtras of the Aṣṭadhyāyī regularly do not contain verb forms as integral components. For example, A 1.1.1-2 (see 9) contain only the nominative singular forms *āt, aic, vṛddhiḥ, at, eṅ, guṇaḥ*; neither sūtra has a verbal form. In accordance with conventions of normal Sanskrit usage, however, one supplies a third singular present form of a verb meaning 'be, occur', which is to be understood and construed with one or more

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nominal forms used in a sūtra: *asti / bhavati* (sg.) 'is, occurs', *staḥ / bhavataḥ* (du.), *santi / bhavanti* (pl.) 'are, occur'. Thus, for example, A 1.1.1-2 are expanded to

(1) **आदैच्चवृद्धिसंज्ञोऽस्ति (भवति)** (*ād aic ca vṛddhi-saṁjño'sti* [*bhavati*]) 'A vowel *ā, ai, au* has the name *vṛddhi*.'

(2) **अदेङ् च गुणसंज्ञोऽस्ति (भवति)** (*ad eṅ ca guṇa-saṁjño'sti* [*bhavati*]) 'A vowel *a, e, o* has the name *guṇa*.'

Remarks.

12 1. The text of the Aṣṭādhyāyī known to earliest Pāṇinīyas was subject to modification in several ways: Entire sūtras were added; single sūtras were split into two; words were added to sūtras; and other modifications, such as changing case forms, were carried out. In most instances, one can see that a change suggested by Kātyāyana in a vārttika or by Patañjali in the Mahābhāṣya has been accepted, with the result that a modified text appears in a work such as the Kāśikāvṛtti. Later Pāṇinyas like Bhaṭṭoji Dīkṣita recognize that some sūtras were added to the original sūtrapāṭha, and they restore unmodified versions of sūtras that had been modified. Since the Kāśikāvṛtti is the most commonly used running commentary on the Aṣṭādhyāyī, I have adopted its serial numbering, although this represents an inflated text. The Kāśika's text of the Aṣṭādhyāyī has 3983 sūtras, distributed among adhyāyas and pādas as follows:

I.1:	75	2:	73	3:	93	4:	110	**I:**	**351**		
II.1:	72	2:	38	3:	73	4:	85	**II:**	**268**	**I-II:**	**619**
III.1:	150	2:	188	3:	176	4:	117	**III:**	**631**	**I-III:**	**1250**
IV.1:	178	2:	145	3:	168	4:	144	**IV:**	**635**	**I-IV:**	**1885**
V.1:	136	2:	140	3:	119	4:	160	**V:**	**555**	**I-V:**	**2440**

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VI.1:	223	2:	199	3:	139	4:	175	**VI: 736**	**I-VI: 3176**
VII.1:	103	2:	118	3:	120	4:	97	**VII: 438**	**I-VII: 3614**
VIII.1:	74	2:	108	3:	119	4:	68	**VIII: 369**	**I-VIII: 3983**

13 2. Pāṇinīyas recognize that verb forms are to be supplied for sūtras in accordance with everyday usage. For example, in his eleventh vārttika on **A** 2.3.1 (240), Kātyāyana remarks that the verb *as* 'be, occur', though not overtly used (*aprayujyamāno'pi*), is understood to occur (*asti* 'occurs') followed by a third-person (*prathamapuruṣaḥ*) present ending (*bhavantīparaḥ*). [... **अस्तिर्भवन्तीपरः प्रथमपुरुषोऽप्रयुज्यमानोऽप्यस्ति।**] Although Kātyāyana says the verb *as* is understood to occur by suppletion, Pāṇinīyas also supply forms of *bhū* and recognize that both verbs serve the same purpose. For example, in the Mahābhāṣya on **A** 1.1.3 vt. 2 (Bh. I.44.8: **अथवैकयोगः करिष्यते। वृद्धिरादैजदेङ्गुणः।**), the suggestion is made that **A** 1.1.1-2 (see 9) be made one rule (*ekayogaḥ*). In his commentary on this passage, Bhartṛhari explains that this means one instance of *bhū* (*bhavatir ekaḥ*) is supplied (*adhyāhriyate*) in uttering (*uccāraṇe*) what is now a single statement. [Dīpikā 94.5-6: **भवतिरेक उच्चारणेऽध्याह्रियते।** cf. Pr. I.145: **एको भवतिरध्याह्रियते। वृद्धिरादैजदेङ्गुणो भवतीत्येकवाक्यत्वं सम्पद्यते।**] Moreover, Kātyāyana himself recognizes that *bhū* is thus used (e.g., **A** 1.2.1 vt. 2: *bhavati*), so that it is simplest to assume that, although he speaks explicitly only of *as* when saying how suppletion works for utterances with no overt verb form in places where no other verb is to be understood from the immediate context, this is meant to refer to a group of verbs meaning 'be, occur'.

1.1.1. Operational rules.

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14 To describe Sanskrit, Pāṇini uses a derivational system (see Chapter 2) in which the following procedures play roles: Affixes are introduced to given items; augments are added to elements; one element replaces another; one of a group of elements is allowed to occur as a single remainder, instead of the whole group; an element is doubled; items are combined to form compounds.

1.1.1.1. Affixation rules.

15 Affixation rules, whereby affixes are introduced to given items, are included in the third, fourth, and fifth adhyāyas of the Aṣṭādhyāyī. This large section of sūtras begins with the heading

A 3.1.1: **प्रत्ययः।** (*pratyayaḥ*)

which assigns the class name *pratyaya* ('affix') to elements introduced by subsequent rules. Most Sanskrit affixes are suffixes, so that in

A 3.1.2: **परश्च।** (*paraś ca*)

Pāṇini provides that an item which has the name *pratyaya* by A 3.1.1 also (*ca*) occurs after (*paraḥ* [*bhavati*]) the unit to which it is introduced. For example, the affix *kalpa* (*kalpap*: A 5.3.67 [356]) of *paṭukalpa* 'almost sharp, sharpish, something like sharp' follows *paṭu* 'sharp'.

16 In accordance with the structure of Sanskrit, Pāṇini must also recognize prefixes and infixes, so that A 3.1.2 (15) is only the general rule concerning where affixes occur. Now, the affix *-na-* of *yunakti* 'joins, connects, yokes' occurs within the base *yuj*: *yu-na-k-ti* (< ... *yu-na-j-ti* < *yuj-ti*). *na* is one of a group of elements that occupy this particular position with respect to other items. This position is shown by appending the marker (*it*: A 1.3.3 [80]) *m* to such elements. According to

A 1.1.47: **मिदचोऽन्त्यात्परः।** (*mid aco'ntyāt paraḥ*)

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an element with the marker *m* (*mit*) occurs after (*paraḥ*) the last vowel (*aco'ntyāt*) of the unit to which it is introduced. The affix of *yunakti* is so marked: *śnam* (A 3.1.78 [157]).

In other cases, Pāṇini has to specify the position of particular affixes. Thus, in A 5.3.71 (354) he provides that *akac*, an affix introduced to items of the avyaya class and to pronominals, precedes that part of such an item which begins with its last vowel, and A 5.3.68 (356) stipulates that the affix *bahuc* of derivates such as *bahupaṭu*, synonymous with *paṭukalpa* (see 15), precedes an item that terminates in a nominal ending.

17 **1.1.1.2. Augments.**

Augments are introduced as parts of other elements. Some augments occur within grammatical units. For example, the nominative-accusative plural *chandāṁsi* 'meters' (< *chandāns-i* < *chandans-i* < *chandas-i*) is derived with the augment *n*, which is added to the stem *chandas-* when this is followed by the ending *śi*. This augment is marked with *m* (*num*: A 7.1.72 [488]), so that, by A 1.1.47 (16), it follows the last vowel of the item to which it is added, in this particular instance the *-a-* of *-as* in *chandas-*. Augments also are added as initial and final segments of items. For example, the third singular imperfect active *apacat* 'cooked' has an augment *a* that is added as the initial segment of the stem *paca-* (*pac-a-*); *sthāp-* of the causative *sthāpi* (*sthāp-i*) 'cause to be in place, set' (3sg. pres. ind. act. *sthāpayati*) contains the final augment *p*, added to the verb *sthā* 'come to a stand, be in place'. The positions of such augments are shown by two markers: *ṭ* for initial augments, *k* for final augments. According to

A 1.1.46: आद्यन्तौ टकितौ (*ādyantau ṭakitau*)

elements that have the markers *ṭ* and *k* (*ṭakitau*) are

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respectively the initial and final parts (*ādyantau*) of the items to which they are introduced. To derive *apacat* and *sthāpi*, Pāṇini lets the augments *aṭ* and *puk* (A 6.4.71, 7.3.36 [238, 124]), with these markers, be added to stems.

18 Single sounds may also take augments. Consider the precative middle form *kṛṣīyāstām* '(my wish is that) they two might make ... for themselves' and the corresponding second person dual form *kṛṣīyāsthām*. As derived in Pāṇini's system, these forms consist of the verb *kṛ* 'make, do' and the endings *ātām* (3du. mid.), *āthām* (2du. mid.) with two augments. One of these augments, *sīyuṭ* (A 3.4.102 [401]), is added as the initial part of each ending, hence marked with *ṭ* (A 1.1.46 [17]). The other augment, *suṭ* (A 3.4.107), precedes the *t* and *th* of *ātām, āthām*. This segment cannot be made the initial part of endings. Pāṇini introduces it as an augment to *t* and *th* of certain verb endings. He also marks this segment with *ṭ* in accordance with A 1.1.46. However, since the items to which this augment is added are individual sounds, the augment simply precedes these sounds: by the very nature of the situation, it cannot be the initial segment of the items to which it is added. Similarly, the augment *tuk* is added to short vowels (A 6.1.71 [394]), which it necessarily follows.

Remark.

19 Pāṇinīyas from Kātyāyana on call augments *āgama*, and this term is comparably used also in non-Pāṇinian works. For example, TPr. 1.23: **अःकार आगमविकारिलोपिनाम्।** (*aḥkāra āgamavikārilopinām*) states that a nominative form (*aḥkāraḥ* 'ḥ [of nominative forms]') denotes an augment, an item subject to modification, or one subject to deletion; the sūtra uses *āgama, vikārin*, and *lopin*, respectively, with respect to these three. The term *āgama* is comparably used also in Mīmāṁsā. For example, In his Bhāṣya on Jaiminisūtra 10.5.8.27

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(Ānandāśrama Sanskrit Series volume 97, part 6 [Poona, 1934], p. 1956), Śabara uses *āgama* with reference to the advent of additional ṛc brought in to make up a requisite number of ṛc; this contrasts with the repetition (*abhyāsa*) of ṛc that are given. [किं सामिधेनीष्वागमेन सङ्ख्या पूरयितव्या उताभ्यासेन ...] Although Pāṇini does not use *āgama* to refer to augments, this does not mean he fails to recognize such elements. On the contrary, A 1.1.46 (17) explicitly provides that elements such as *aṭ* and *puk* are the initial and final parts of items to which they are introduced. Pāṇini simply does not need *āgama* as a class name to refer to augments as a group.

1.1.1.3. Substitution rules.

20 A substitution rule provides that one element occurs in place of another. The procedure of letting a replacement (*ādeśa*) occur instead of a substituend (*sthānin*) accounts for the distribution of related complementary elements. For example, there are pairs such as the nominative accusative singulars *dadhi, dadhy* 'curds' and *madhu, madhv* 'honey'. The items with *-y, -v* occur before vowels other than *i ī, u ū*, provided that they and the items that follow are pronounced in close junction (*saṁhitāyām*: A 6.1.72 [107]). The distribution of such pairs is accounted for by letting *y* and *v* substitute for *i ī* and *u ū* before other vowels (A 6.1.77 [125]).

21 Pāṇini also operates with abstract elements, items which he posits in his derivational system but which never are found in actual utterances, so that they necessarily are subject to replacement. Some abstract elements are replaced by items that occur in normal usage. For example, L-affixes are replaced by verb endings and participial suffixes (A 3.4.77-78, 3.2.124-126 [232, 262]); the abstract suffix *cli* is replaced by suffixes such as *sic* (A 3.1.43-44 [236]). On the other hand, in particular instances, abstract affixes are not replaced by

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overtly used elements. For example, the agentive suffix *kvip* is simply deleted (A 6.1.67 [409]).

22 In Pāṇini's system, a substituend is regularly denoted by a genitive form (A 1.1.49 [90]). The element subject to replacement can be a sound or a larger grammatical unit. As a general rule, the last sound of a grammatical element is replaced (A 1.1.52-53 [95]), but its initial sound is replaced if substitution applies in a left context (A 1.1.54). Further, certain substitutes replace whole grammatical units; these replacements either consist of more than one sound or are marked with *ś* (A 1.1.55).

1.1.1.4. Rules providing for a single remainder.

23 Consider the derivates *gárgya* and *gārgyāyaṇa*, which refer to members of the Garga lineage with different statuses (gotra and yuvan descendants: A 4.1.162-164 [78]). The first term is derived with the taddhita suffix *yañ* (A 4.1.105 [335]) and its first vowel is high-pitched (A 6.1.197 [600]); the second is formed with the taddhita suffix *phak* (A 4.1.101[335]) and its second *ā*, that of *-āyaṇa*, is high-pitched (A 3.1.3 [592]). There is also a dual formation (e.g., nom.-acc. *gārgyau*), which refers to a Gārgya and a Gārgyāyaṇa together. Suppose that the base *gārgya* of this formation were accounted for by letting *gārgya* substitute for both *gārgya* and *gārgyāyaṇa*. In accordance with the usual convention governing replacements (A 1.1.56 [100]), the substitute would have the properties of its substituends. Consequently, although the base in question should have a high-pitched initial vowel only, one would allow not only a substitute *gárgya*, with high pitch on its first vowel, but also possibly **gārgyá*, **gárgyá*. That this could indeed obtain is clear from something else Pāṇini provides for. There are sūtras of the Aṣṭādhyāyī which provide for a single substitute in place of two contiguous elements (A 6.1.84 [106]). Among the substituends subject to such replacement are high-

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and low-pitched vowels. Pāṇini explicitly states that if a single vowel replaces two vowels, one with high-pitch, the other with another pitch, the result is a high-pitched vowel (A 8.2.5 [610]), not a vowel with the properties of both the substituends. Clearly, in the absence of this stipulation, the grammar could allow such an undesired result. Similarly, it could allow a derivate *gārgya* with undesired properties, if this were derived by substitution as shown, without any further provision. One way to avoid such undesired consequences in this and other comparable instances is to account for the derivates in question not by means of substitution but in another way. Pāṇini does this. He provides that only one of a group of items taken together be the single remainder (*ekaśeṣa*) to be used (A 1.2.64-73 [374-377]). In the particular instance under consideration, of the two items *gārgya* and *gārgyāyaṇa*, the first is the single remainder (A 1.2.65 [374]) used with dual endings such as -*au* in *gārgyau*. Similarly, particular consonants of elements called *abhyāsa* are allowed to be single remainders (A 7.4.60-61 [383]).

24 **1.1.1.5. Rules for doubling elements.**

Certain sūtras of the Aṣṭādhyāyī provide that given elements are doubled, so that one gets two (*dve*) of them, under particular conditions. There are two major groups of rules that deal with such doubling. Sūtras of the section beginning with

A 6.1.1: **एकाचो द्वे प्रथमस्य।** (*ekāco dve prathamasya*)

A 6.1.2: **अजादेर्द्वितीयस्य।** (*ajāder dvitīyasya*)

A 6.1.3: **न न्द्राः संयोगादयः।** (*na ndrāḥ saṁyogādayaḥ*)

give conditions under which a syllable (*ekācaḥ* [gen. sg.]) is doubled. This applies to the second (*dvitīyasya*) syllable of an item that begins with a vowel (*ajādeḥ*) --- though

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cluster-initial (*saṁyogādayaḥ*) *n, d,* and *r* (*ndrāḥ*) are then not (*na*) iterated --- and to the first (*prathamasya*) syllable of other items. For example, the perfect *papaca* (1sg. act.) 'cooked' contains a sequence *papac-* (< *pacpac-*) gotten by doubling *pac*; the second syllable (i.e., *-ṭi-*) of *aṭisa*, with the desiderative suffix *san* (A 3.1.7 [279]), is doubled to derive *aṭiṭiṣa* 'wish to wander' (3sg. pres. *aṭiṭiṣati*).

25 Rules of the section that begins with

A 8.1.1: **सर्वस्य द्वे।** (*sarvasya dve*)

give conditions under which a whole (*sarvasya* [gen. sg.]) word is iterated. A sequence such as (101) *pacati pacati* '... cooks constantly' (A 8.1.4 [370]) is gotten by such doubling.

1.1.1.6 Composition rules.

26 Composition rules provide that two or more items, generally ones that terminate in nominal endings, combine to form a compound (*samāsa*). These sūtras are included in the first two pādas of the second adhyāya, headed by

A 2.1.3: **प्राक्कडारात्समासः।** (*prāk kaḍārāt samāsaḥ*)

According to this heading, derivates formed by subsequent rules, prior to (*prāk*) the last sūtra of the second pāda in the second adhyāya (A 2.2.38 [321]: **कडाराः कर्मधारये।**) --- the first term in which is a form of *kaḍāra* (abl. sg. *kaḍārāt*, nom. pl. *kaḍārāḥ*) --- have the class name *samāsa*. See Section 2.4.2.3.

1.1.2. Ancillary rules.

27 Ancillary rules of all three major kinds (see 10) have in common that they serve to interpret other sūtras. Yet ancillary rules of the same major type may differ in the precise purpose they serve. Thus, there are saṁjñāsūtras that serve only to establish general conventions regarding the use

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of terms in the grammar. Other saṁjñāsūtras provide that certain class names apply to given items, so that they are classificatory rules. Some such sūtras concern in particular sounds classed as markers (*it*). There are also saṁjñāsūtras that deal with terms for zeroes. Metarules also serve various purposes. Some come into play to interpret in a specified manner particular case forms in contexts such that in each instance a Sanskrit speaker could not arrive at a single interpretation without the aid of a metarule. Other paribhāṣās serve to restrict the choice of substitutes or substituends that are involved in particular operations. Still other paribhāṣās are extension rules.

1.1.2.1. Saṁjñāsūtras.

1.1.2.1.1. Saṁjñāsūtras that establish general conventions.

28 Pāṇini uses Sanskrit to describe Sanskrit, which is thus both the object of his description and the metalanguage of his grammar. Of course, there are some differences between Pāṇini's metalanguage and Sanskrit as it was ordinarily used, so that Pāṇini had to establish certain conventions regarding the use of Sanskrit in his work.

29 One convention concerns terms and their referents. In ordinary Sanskrit, a term that has a meaning is used to signify that meaning; for example, *agni* (nom. sg. *agniḥ*) denotes fire. If one wishes to designate a linguistic element (*śabda*) itself, not its meaning, one uses the citation particle *iti*; for example, *agnir iti* refers to the word *agni* and not to fire. Now, rules that introduce affixes and augments, that provide for replacement or doubling of elements, and rules of composition all concern operations in respect of linguistic elements, so that Pāṇini has constantly to refer to speech units in sūtras of his Aṣṭādhyāyī. Hence, he adopts a

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convention opposed to the one observed in ordinary usage: A linguistic element's own form (*svaṁ rūpam*) is understood to refer to that element (*śabdasya* [*saṁjñā*] '[name] of a speech unit') itself, not to signify the meaning of the item, unless the element in question is a technical term of grammar (*aśabdasaṁjñā*):

A 1.1.68: **स्वं रूपं शब्दस्याशब्दसंज्ञा।** (*svaṁ rūpaṁ śabdasyāśabdasaṁjñā*)

Thus, an item such as *agni,* which is not a technical term of grammar, is self-referring, treated as though followed by *iti.* On the other hand, a term like *vṛddhi* (A 1.1.1 [9]) is not self-referring; it denotes members of a class to which the name has been assigned. Moreover, since A 1.1.68 reverses the usual convention, *iti* is used when the meaning of an item is intended; for example, *na veti* (A 1.1.44 [31]) denotes the meaning of *na vā* ('or not') instead of these items themselves.

30 The abbreviation *ac,* formed according to A 1.1.71 (83), refers in the first instance to the vowels given in Pāṇini's akṣarasamāmnāya, and by A 1.1.69 (84) these are made class names referring to sets of vowels. Now, there are various operations that apply to elements ending in vowels. For example, the affix *yat* follows verbs that end in vowels (A 3.1.97 [122]) to form derivates such as *ceya* (< *ci-ya*) 'something to be gathered, heaped up, plucked'. Instead of repeatedly using terms like *ajantāt* 'ending in a vowel', Pāṇini establishes another convention, in

A 1.1.72: **येन विधिस्तदन्तस्य।** (*yena vidhis tadantasya*)

According to this sūtra, a qualifier **x** by means of which (*yena*) a provision (*vidhiḥ*) is made serves as a term denoting an item **y** that ends in **x** (*tadantasya* [*saṁjñā bhavati*]). Thus, *acaḥ* in A 3.1.97, where it is construed with the heading *dhātoḥ* (A 3.1.91 [66]), refers to a verb which ends in a vowel. In accordance with the convention established by A 1.1.72, one understands *acaḥ* to be equivalent to *ajantāt.*

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31 Another convention concerns the use of terms that have to do with options. Several such terms are used in Sanskrit. Consider first *ubhayathā* 'in both ways'. A Sanskrit speaker could be expected to know that this term is regularly adverbial, so that he would construe it with supplied forms of a verb meaning 'be, occur' (see 11, 13), and to know that the term is used when two possibilities are given. Pāṇini uses *ubhayathā* in this manner. For example, A 3.4.117 (63) provides that in respect of Vedic usage verb endings and verbal affixes marked with *ś* are classed in the two ways provided for by preceding sūtras. On the other hand, *vā* 'or' is not necessarily adverbial; it is also used adnominally. Accordingly, a Sanskrit speaker could not be required immediately to interpret a rule such as A 4.1.82 (111): **समर्थानाम्प्रथमाद्वा।** unambiguously. He could, to be sure, construe *vā* with a supplied verb form. The rule would then provide that elements to be specified occur, optionally, after the first of semantically and syntactically related items. On the other hand, one could also construe *vā* with the term *prathamāt* ; the rule would then undesirably provide that the elements to be specified occur after the first of related items or after some other such item. In effect, *vā* should be understood in the sense of *na vā* 'or not' and construed with supplied verb forms. Accordingly, Pāṇini provides, by

A 1.1.44: **न वेति विभाषा।** (*na veti vibhāṣā*)

that an option (*vibhāṣā*) should be understood to be what *na vā* signifies (see 29). That is, terms having to do with options are regularly construed with verb forms supplied in sūtras, so that optional rules provide that something either obtains or not (*na vā*). Pāṇini uses *ubhayathā, vā, anyatarasyām, vibhāṣā, vibhāṣitam* in rules that involve options.

1.1.2.1.2. Saṁjñāsūtras that introduce class names.

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32 Most saṁjñāsūtras of the Aṣṭādhyāyī introduce class names (*saṁjñā*). They provide that given entities bear these class names, so that the sūtras in question are classificatory rules. The terms introduced by such rules are used to refer to members of classes in respect of operations, and membership in a class is in effect determined by operations. Some of the classes Paṇini recognizes are made up of entities other than speech units, but most of the classes consist of linguistic elements. These are both phonological classes and groups of higher units.

1.1.2.1.2a. Phonological classes.

33 Pāṇini operates with sets of sounds that are homogeneous (*savarṇa*) with each other. According to

A 1.1.9: **तुल्यास्यप्रयत्नं सवर्णम्।** (*tulyāsyaprayatnaṁ savarṇam*)

a sound is said to be *savarṇa* with another if it is produced with the same articulatory effort at the same place of production in the oral cavity (*tulyāsyaprayatnam*) as that sound. In the phonological system which Pāṇini adopts, stops (*sparśa*) are characterized by an articulator's making full contact (*spṛṣṭa*) at a place of production, semivowels (*antaḥsthā*) by slight contact (*iṣatspṛṣṭa*) between articulator and place, vowels (*svara*) by separation (*vivāra* 'opening') between them, that is, by the absence of contact. There are sets of *a*-, *i*-, and *u*- vowels, each with eighteen members: short *a i u,* long *ā ī ū,* and trimoric *a3 i3 u3,* each oral or nasalized and pronounced with low pitch, high pitch, or a combination of high and low pitches. All these vowels have the same articulatory effort (*prayatna*), but they differ with respect to places of production (*sthāna*) in the oral cavity (*āsya*): *a*- vowels are post-palatal (*kaṇṭhya*), *i*- vowels palatal (*tālavya*), *u*-vowels labial (*oṣṭhya*). By A 1.1.9, vowels

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in each of these groups are called *savarṇa* with respect to each other. Similarly, there are eighteen *ṛ*- vowels, all homogeneous with each other. On the other hand, there are only twelve *ḷ*-vowels, since there is no long counterpart to *ḷ*. The sets of *e*-, *o*-, *ai*-, and *au*- vowels also have twelve members each, since they do not include short vowels. Stops are divided into five classes (*varga*) of five each: post-palatal *k kh g gh ṅ* (voiceless unaspirated and aspirated, voiced unaspirated and aspirated, nasal), palatal *c ch j jh ñ*, retroflex (*mūrdhanya*) *ṭ ṭh ḍ ḍh ṇ*, dental (*dantya*) *t th d dh n*, and labial *p ph b bh m*. By A 1.1.9, the sounds in each of these groups are *savarṇa* with each other. There are also pairs of homogeneous semivowels, simple and nasalized: palatal *y* and its nasalized counterpart *yṁ*, dental *l* and *lṁ*, labio-dental *v* and *vṁ*. The semivowel *r* and the spirants *ś ṣ s h* do not have nasalized counterparts.

34 In the phonological system adopted by Pāṇini, both vowels and spirants are characterized by separation between articulator and place of production. In terms of A 1.1.9 (33), then, certain vowels and spirants, such as *i*-vowels and the palatal spirant *ś*, would be homogeneous with each other. This is disallowed by

A 1.1.10: **नाज्झलौ** (*nājjhalau*)

an exception to A 1.1.9, which provides that vowels and consonants (*ajjhalau*) are not (*na*) termed *savarṇa* with each other. In this way, sets of homogeneous sounds consist exclusively of vowels or consonants.

35 Vowels enter into three sets by virtue of length differences. According to

A 1.2.27: **ऊकालोऽज्झ्रस्वदीर्घप्लुतः।** (*ūkālo'j jhrasvadīrghaplutaḥ*)

a vowel (*ac*: A1.1.71, 69 [83-84]) is called *hrasva* ('short'), *dīrgha* ('long'), or *pluta* ('prolated, extra-long') according as it has the duration (*kāla* 'time') of short *u*, long *ū* or the

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extra-long vowel *uɜ* of more than two morae (*ūkālaḥ*).

36 Pitch properties of vowels are pertinent to three other classes. A vowel (*ac*) pronounced high (*uccaiḥ*) is called *udātta* ('high-pitched vowel'), one pronounced low (*nīcaiḥ*) is called *anudātta* ('low-pitched vowel'), and one that has a combination of these properties (*samāhāraḥ*) is called *svarita*:

A 1.2.29: **उच्चैरुदात्तः।** (*uccair udāttaḥ*)

A 1.2.30: **नीचैरनुदात्तः।** (*nīcair anudāttaḥ*)

A 1.2.31: **समाहारः स्वरितः।** (*samāhāraḥ svaritaḥ*)

According to

A 1.2.32: **तस्यादित उदात्तमर्धह्रस्वम्।** (*tasyādita udāttam ardhahrasvam*)

a svarita vowel has (*tasya* 'of that') a high-pitched segment (*udāttam*) at its beginning (*āditaḥ*) for the length equivalent to that of half a short vowel (*ardhahrasvam*). That is, the first half-mora of a svarita vowel is high-pitched, its remainder low-pitched.

37 In addition, vowels belong to two other classes, depending on their length and phonological environment. According to

A 1.4.10: **ह्रस्वं लघु।** (*hrasvaṁ laghu*)

A 1.4.11: **संयोगे गुरु।** (*saṁyoge guru*)

A 1.4.12: **दीर्घञ्च।** (*dīrghañ ca*)

a short vowel (*hrasvam*: A 1.2.27 [35]) has the class name *laghu* ('light') unless it is followed by a consonant cluster (*saṁyoge*: A 1.1.7 [40]), in which case it does not have this name but is called *guru* ('heavy') instead, and a long vowel also (*ca*) has the class name *guru*.

38 A 1.1.45: **इग्यणः सम्प्रसारणम्।** (*ig yaṇaḥ samprasāraṇam*)

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lets *samprasāraṇa* denote both a set of vowels and an operation: *i-*, *u-*, *ṛ-*, and *ḷ-* vowels (*ik*: A 1.1.71, 69 [83-84]) that replace semivowels *y v r l* (*yaṇaḥ*: A 1.1.49 [90]) are called *samprasāraṇa*, and this term denotes also the replacement of those semivowels by those vowels. See A 6.1.15-17,108, 6.4.2 (388, 533, 421).

39 A sound pronounced through the mouth and nose at once (*mukhanāsikāvacanaḥ*) has the class name *anunāsika* by

A 1.1.8: **मुखनासिकावचनोऽनुनासिकः।**

(*mukhanāsikāvacano'nunāsikaḥ*)

Accordingly, Pāṇini uses *anunāsika* with reference to nasalized vowels and semivowels as well as nasal stops (see A 8.3.2, 8.4.45 [555, 575]).

40 According to

A 1.1.7: **हलोऽनन्तराःसंयोगः।**

(*halo'nantarāḥ saṁyogaḥ*)

any group of contiguous (*anantarāḥ*) consonants (*halaḥ*: A 1.1.71 [83]), that is, a consonant cluster, is called *saṁyoga*.

41 Two saṁjñāsūtras concern terms used of sounds or groups of sounds that occupy particular positions in larger units. By

A 1.1.64: **अचोऽन्त्यादि टि।** (*aco'ntyādi ṭi*)

that part of an item which begins with its last vowel (*aco'ntyādi*) is called *ṭi*, and according to

A 1.1.65: **अलोऽन्त्यात्पूर्व उपधा।** (*alo'ntyāt pūrva upadhā*)

a sound that precedes (*pūrvaḥ*) the final sound (*alo'ntyāt*) of an element, its penultimate sound, has the class name *upadhā*.

42 Two other saṁjñāsūtras pertinent to phonology do not concern phonological elements themselves. By

A 1.4.109: **परः सन्निकर्षः संहिता।** (*paraḥ sannikarṣaḥ saṁhitā*)

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saṁhitā denotes the maximum (*paraḥ*) drawing together (*sannikarṣaḥ*) of sounds in a speech flow, that is, close junction of sounds. According to

A 1.4.110: **विरामोऽवसानम्** (*virāmo'vasānam*)

avasāna denotes the cessation of speech (*virāmaḥ*). Particular phonological operations apply when elements occur in close junction (*saṁhitāyām*: A 6.1.72, 3.114 [107]), others when sounds occur *in pausa* (*avasāne*: A 8.4.56 [578], *khàravasānayoḥ*: A 8.3.15 [557]).

Remarks.

43 1. As can be seen from A 1.1.9 (33), Pāṇini presupposes a detailed knowledge of phonetics. It is assumed that a student of his grammar has mastered **śikṣā**, the science of phonetics, general treatises on which deal with how sounds are produced. Indeed, Sanskrit has a phonetic and phonological terminology that certainly antedates Pāṇini. Vowels are called *svara*, consonants *vyañjana*, semivowels *antaḥsthā*, and spirants *ūṣman*. The phonological terms *ghoṣavat* and *aghoṣa* refer to voiced and voiceless consonants. Stops are arranged in five classes (*varga*) of five members each, and these groups are referred to by compounds with -*varga*: *kavarga* (also *kakāravarga*), *cavarga* (*cakāravarga*), *ṭavarga* (*ṭakāravarga*), *tavarga* (*takāravarga*), *pavarga* (*pakāravarga*) refer to the groups of stops that begin with *k c ṭ t p* (*ka* or *kakāra*, etc.). Within each of these groups, stops are arranged as shown in 33, and ordinal number words are used to refer to members of the sets: *prathama* 'first', *dvitīya* 'second', *tṛtīya* 'third', *caturtha* 'fourth', and *pañcama* 'fifth' (or *uttama* 'last'). In addition, there are terms that denote sounds according to their places of production: *kaṇṭhya* 'located in the throat', *jihvāmūlīya* 'located at the root of the tongue (i.e., velar)', *tālavya* 'palatal', *mūrdhanya* 'located at the mūrdhan (i.e.,

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retroflex)', *oṣṭhya* 'labial'. These and comparable terms are known from prātiśākhya and śikṣā works, with which I shall deal in part III.2 of my work. Paṇinīyas use this terminology too, in addition to specifically Pāṇinian terms. On the other hand, Pāṇini refers to most of the classes noted by means of abbreviatory terms (see 129): *ac* 'vowels', *hal* 'consonants', *yaṇ* 'semivowels', *śal* 'spirants', *haś* 'voiced consonants', *khar* 'voiceless consonants', *ku cu ṭu tu pu* for the five stop classes. Abbreviations like *ac* (*a* with the marker *c*), interpreted by A 1.1.71 (83), are based on an ordered set of sounds, Pāṇini's akṣarasamāmnāya (Section 1.2, figure C). If the order of sounds in this catalog does not allow referring to a group of sounds by means of this kind of abbreviation, of course, Pāṇini uses another term. This may be another abbreviatory term, such as *ku* (*k* with the marker *u*), used to refer to velar stops. It can also be a phonological term such as *hrasva* (A 1.2.27 [35]). Further, Pāṇini also uses phonetic terminology; e.g., *mūrdhanya* (A 8.3.55 [105]) refers to retroflex stops and *ṣ*.

44 2. In general, *hrasva*, *dīrgha*, *pluta* (A 1.2.27 [35]) as used in the Aṣṭādhyāyī are masculine. This accords with the gender of *svara* 'vowel' (see 43). On the other hand, *hrasva*, *dīrgha* in A 1.4.10-11 (37) are neuter, as are *laghu*, *guru*. This accords with the gender of *akṣara* 'syllable'.

1.1.2.1.2b. Classes of grammatical elements.

45 Pāṇini of course recognizes classes of grammatical elements connected with particular operations. Some such items can be given in ordered sets, as in the dhātupāṭha and gaṇapāṭha (Sections 1.3-1.4), to members of which Pāṇini refers in various ways. He does so most commonly by means of compounds in which the first member is the first item of a set or subgroup, the second member a term meaning 'first' or 'beginning with'; for example, *bhūvādayaḥ* (A 1.3.1 [47]) refers

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to verbs of the dhātupāṭha, the initial (*ādi*) element of which is *bhū* 'be, become'; *adiprabhṛtibhyaḥ* (A 2.4.72 [158]) refers to a subgroup in the dhātupāṭha that begins with (-*prabhṛti*) *ad* 'eat'. In addition, a plural form of the first item in a set can refer to the whole group of elements; thus, *kaḍārāḥ* (A 2.2.38 [321]) refers to the group of items that begins with *kaḍāra* 'tawny'.

Items that cannot be included in ordered sets may bear common markers to show that they constitute a group in respect of certain operations. For example, some affixes are marked with *ñ* or *ṇ* to show that they condition substitution by vṛddhi vowels in stems that precede them (A 7.2.115 [417]). In still other cases, Pāṇini must use particular class names to refer to sets of elements.

46 In Pāṇini's derivational system (Chapter 2), affixes (*pratyaya*: A 3.1.1 [15]) are introduced after given items to form complexes of the types B-A, $B-A_2-A_1$. In the first type, a single affix A follows B, but the second type contains two affixes introduced after the same base element in a particular order: A_1 follows B, then A_2 is introduced after B on condition that this already occurs with A_1. Let us call B and $B-A_2$ of such complexes presuffixal bases or stems. Pāṇini's class name is *aṅga*. By

A 1.4.13: यस्मात्प्रत्ययविधिस्तदादि प्रत्ययेऽङ्गम् (*yasmāt pratyayavidhis tadādi pratyaye'ṅgam*)

a unit that begins with an item B (*tadādi*) after which (*yasmāt*) an affix A is introduced (*pratyayavidhiḥ*) and is followed by A (*pratyaye*) is called *aṅga* in respect of this affix. B-A has a single aṅga, B, relative to A. $B-A_2-A_1$, with two affixes introduced in the order noted, contains two aṅgas: $B-A_2$ in respect of A_1 and B relative to A_2. The item B to which an affix is introduced can be a verbal base (*dhātu*: A 1.3.1, 3.1.32 [47]), a nominal base (*prātipadika*: A 1.2.45-46

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[48]), an item with a feminine affix *ī*, *ā*, or an element with a nominal or a verbal ending (*pada*: A 1.4.14 [49]). For example, *as*-'be, occur' in *as-ti*(3sg. pres. indic.) is an aṅga relative to the ending *tip*; *vṛkṣa*-'tree', *kumārī*-'girl', and *ajā*- 'she goat' in *vṛkṣa-ya* (> *vṛkṣāya* [dat. sg.]), *kumārī-e* (> *kumāryai* [dat. sg.]), *ajā-e* (> *ajāyai* [dat. sg.]) are aṅgas in respect of the nominal ending *ṅe* and its replacement *ya*; *kṣi-a-ti*(> *kṣiyati* 'dwells') and *sū-a-ti*(> *suvati* 'impels') contain two aṅgas each: *kṣi-a-*, *sū-a-* are aṅgas in respect of *tip*, and *kṣi-*, *sū-* are aṅgas relative to the suffix *śa*.

Stems and affixes condition particular operations on each other. Thus, after a stem in *-a* the ending *ṅe* is replaced by *ya* (A 7.1.13 [492]): *vṛkṣa-e* > *vṛkṣa-ya*. Stem-final short *-a* is replaced by *-ā* before nominal endings that begin with *y*, *bh*(A 7.3.102 [482]): *vṛkṣa-ya* > *vṛkṣā-ya*. After nadī elements (A 1.4.3-6 [56]), the initial augment *āṭ* is added to nominal endings marked with *ṅi* (A 7.3.112 [499]), and these endings are augmented with initial *yāṭ* when they follow stems with feminine affixes *āp* (A 7.3.113): *kumārī-e* > *kumārī-āe* > *kumārī-ai* (A 6.1.90 [529]) > *kumāryai* (A 6.1.77 [125]), *ajā-e* > *ajā-yāe* > *ajāyai* (A 6.1.88). Final *i*- and *u*- vowels of verbal stems are replaced respectively by *-iy* and *-uv* before vowel-initial affixes (A 6.4.77 [452]): *kṣi-a-ti* > *kṣiyati*, *sū-a-ti* > *suvati*.

47 Verbs are of two general types, primitive and derived. By

A 1.3.1: **भूवादयो धातवः।** (*bhūvādayo dhātavaḥ*)

items of the ordered set that begins with *bhū* 'be, become' (*bhūvādayaḥ*) have the class name *dhātu*. These are primitive verbs listed in Pāṇini's dhātupāṭha (Section 1.3). Derived verbs are assigned the same class name by

A 3.1.32: **सनाद्यन्ता धातवः।** (*sanādyantā dhātavaḥ*)

according to which derivates that end in the affixes *san* etc. (*sanādyantāḥ*), introduced by preceding rules, are called *dhātu*. For example, the desiderative *cikīrṣa* 'wish to do, make',

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formed with the suffix *san* (A 3.1.7 [279]), is a derived verb.

48 Nominal bases also are either primitive or derived. A meaningful element (*arthavat*) other than a verb (*adhātuḥ*), an affix, or an item that ends in an affix (*apratyayaḥ*) is called *prātipadika* by

A 1.2.45: **अर्थवदधातुरप्रत्ययः प्रातिपदिकम्।** (*arthavad adhāturapratyayaḥ prātipadikam*)

Such an item is a primitive nominal base. For example, *go* 'cow, bull' has the class name *prātipadika* by A 1.2.45. In addition,

A 1.2.46: **कृत्तद्धितसमासाश्च।** (*kṛttaddhitasamāsāś ca*)

provides that certain derivates also (*ca*) have the class name *prātipadika*: those that end in affixes of the kṛt and taddhita classes (A 3.1.93, 4.1.76 [66, 70]) and compounds (*samāsa*: A 2.1.3 [26]). For example, *kartṛ* (< *kṛ-tṛ*), *kāraka* (< *kṛ-vu*) 'one who does, makes', with the kṛt suffixes *tṛc* and *ṇvul* (A 3.1.133 [248]), *aupagava* (< *upagu-as-a*), with the taddhita affix *aṇ* (A 4.1.83 [335]), and the compound *rajapuruṣa* (< *rājan-as-puruṣa-s*: A 2.2.8.[301]) 'king's servant' are derived nominal bases.

49 The large class of affixes includes verb endings (basic endings: figure A) and nominal endings (figure B), both of which enter into units called *pada*. According to

A 1.4.14: **सुप्तिङन्तम्पदम्।** (*suptiṅantam padam*)

an item that terminates in a nominal or verbal ending (*suptiṅantam*) has the class name *pada*. For example, *vṛkṣāya, kumāryai, ajāyai, asti, kṣiyati, suvati* (see 46) are padas. Items that belong to the pada class by A 1.4.14 are syntactic units: The use of particular endings in such padas is determined by relations that obtain among the significands of bases as used in particular utterances (see Section 2.1). These are also accentual units in that a pada regularly has only one high-pitched vowel (A 6.1.158 [588]); for example , each of the

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padas cited above can have only one such vowel: *vṛkṣā́ya, kumāryaí, ajā́yai, ásti, kṣíyāti, suvā́ti.*

50 As I pointed out earlier (see 25), rules of the section beginning with A 8.1.1 provide for iterating entire words, padas (A 1.4.14 [49]). The second (*param* 'subsequent') pada of the pair that is gotten by doubling (*tasya* 'of that') is called *āmreḍita*:

A 8.1.2: **तस्य परमाम्रेडितम्।** (*tasya param āmreḍitam*)

An āmreḍita has no high-pitched vowel (A 8.1.3 [619]).

51 Almost all subgroups of verbs to which Pāṇini must refer are members of ordered subsets in his dhātupāṭha. Pāṇini can refer to these by means of terms of the types *bhūvādi, adiprabhṛti* (see 45), so that he does not need class names for this purpose. However, there is a group of verbs that make up a set with respect to certain operations but cannot be included in an ordered subset of the dhātupāṭha, so that a special name is needed for them. According to

A 1.1.20: **दाधा घ्वदाप्।** (*dādhā ghv adāp*)

a verb with the form *dā* or *dhā*, except for one of the shape *dā* with the marker *p* (*adāp*), is called *ghu*. Some of the verbs in question have original *-ā*; in others, *-ā* is a substitute for *-e, -o, -ai* (A 6.1.45 [392]). The verbs to which A 1.1.20 assigns the class name *ghu* are: *dāṇ* 'give' (3sg. pres. indic. *yacchati*: A 7.3.78 [437]), *ḍudāñ* 'give' (*dadāti*), *deṅ* 'protect, nurture' (*dayate*), *do* 'cut' (*dyati*), *dheṭ* 'suck' (*dhayati*), *ḍudhāñ* 'put, make' (*dadhāti*). The verbs *daip* 'clean' (*dāyati*) and *dāp* 'cut' (*dāti*) are excluded from the ghu class.

Some of the operations associated with verbs of the ghu set are as follows. The affix *sic* is deleted after them if parasmaipada endings follow (A 2.4.77 [406]); e.g., *adāt* (3sg. aor.) 'gave', *adhāt* 'put, made'. The *-ā* of such verbs is replaced by *-I* before consonant-initial affixes marked with *k* or *ṅ*, by *-e* before the *y-* of precative-optative endings (A 6.4.66-67 [451]): *dīyate, dhīyate* (3sg. pres. pass.), *deyāt, dheyāt* (3sg.

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prec. act.). Before an affix that begins with *t*- and is marked with *k*, the verb *dā* of the ghu class is replaced by *dath* unless it follows a vowel-final preverb, in which case the *-ā* of the verb is replaced by *t* (A 7.4.46-47 [438]): *datta* 'given' (< *dath-ta*, affix *kta*), *pratta* 'presented' (< *pra-dt-ta* < *pra-dā-ta*), but *avadāta* 'cleaned', *dāta* 'cut'.

52 Under specified conditions, the first or second syllable of a verb is doubled (A 6.1.1-2 [24]). The first (*pūrvaḥ* 'prior') of the two syllables thus gotten is called *abhyāsa*, and both the syllables (*ubhe*) together are called *abhyasta*:

A 6.1.4: **पूर्वोऽभ्यासः।** (*pūrvo'bhyāsaḥ*)

A 6.1.5: **उभे अभ्यस्तम्।** (*ubhe abhyastam*)

In addition, by

A 6.1.6: **जक्षित्यादयः षट्।** (*jakṣityādayaḥ ṣaṭ*)

jakṣ 'eat, laugh' and the six verbs that follow it in the dhātupāṭha (see 161) also are called *abhyasta*.

A series of operations is connected with abhyāsa and abhyasta segments. For example, only the first consonant of an abhyāsa is generally allowed to remain (A 7.4.60 [383]); velar stops and *h* are replaced by palatal stops in an abhyāsa (A 7.4.62); after an abhyasta, one has *-ati* instead of *-anti* (A 7.1.4 [509]), and the ending *jhi* is replaced by *jus* (A 3.4.109 [402]). Thus, at one stage of deriving the desiderative verb *cikīrṣa*, one has *kir-kir-sa*, with a sequence *kir-kir-* gotten by doubling. The first segment *kir-* is an abhyāsa, so that only its first consonant is allowed to remain, and this is replaced by the palatal stop *c*. Similarly, the *h* of *hu* 'offer oblations' is replaced by *jh* (which is then replaced by *j*) in an abhyāsa, so that one derives *juhvati* (3pl. pres. indic.); this form has the ending *-ati*, and the corresponding imperfect *ajuhavuḥ* has the ending *-us*.

53 There are several subgroups of nominal bases that require Pāṇini to introduce particular class names. One of these is the

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pronominal set (*sarvanāman*). According to

A 1.1.27: **सर्वादीनि सर्वनामानि।** (*sarvādīni sarvanāmāni*)

members of the ordered group that begins with *sarva* whole, all' (*sarvādīni*) have the class name *sarvanāman*. However, members of this group are not assigned to the pronominal class under all circumstances. By

A 1.1.28: **विभाषा दिक्समासे बहुव्रीहौ।** (*vibhāṣā diksamāse bahuvrīhau*)

these items are only optionally (*vibhāṣā*: A 1.1.44 [31]) called *sarvanāman* if they occur in a bahuvrīhi compound (*bahuvrīhau*) consisting of direction words (*diksamāse*: A 2.2.26 [317]). This sūtra is related to a more general negation rule,

A 1.1.29: **न बहुव्रीहौ।** (*na bahuvrīhau*)

whereby the items in question are not (*na*) called *sarvanāman* if they occur in a bahuvrīhi compound. In addition, members of the set that begins with *sarva* are denied the class name *sarvanāman* when they occur in a compound the first member of which is originally an instrumental form of certain specified items (*tṛtīyāsamāse*):

A 1.1.30: **तृतीयासमासे।** (*tṛtīyāsamāse*)

This exclusion also (*ca*) applies for these items if they occur in a dvandva compound (*dvandve*), but only optionally (*vibhāṣā*) in respect of what applies to *jas* (*jasi*):

A 1.1.31: **द्वन्द्वे च।** (*dvandve ca*)

A 1.1.32: **विभाषा जसि।** (*vibhāṣā jasi*)

Optional classification as sarvanāman in respect of what applies to *jas* also (*ca*) is provided for: **a.** *prathama* 'first', *carama* 'last', derivates with the suffix *tayap*, *alpa* 'little, few', *ardha* 'half', *katipaya* 'some', *nema* 'one, some, half'; **b.** *pūrva* 'prior, eastern', *para* 'subsequent, western, other', *avara* 'lower, later', *dakṣiṇa* 'right, southern', *uttara* 'upper,

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northern', *apara* 'later, western, other', *adhara* 'lower', provided these terms are used with reference to things in a temporal or spatial arrangement (*vyavasthāyām*) --- so that, for example, *dakṣiṇa* 'clever' is not classed as a sarvanāman --- and provided also that the terms are not appellations of particular individuals (*asaṁjñāyām*); **c.** *sva* 'own, possession, wealth', provided this does not of itself denote a relative or wealth (*ajñātidhanākhyāyām*); and **d.** *antara* used of something that is exterior to another or with reference to a garment one wraps around oneself but that is not an outer garment (*bahiryogopasaṁvyānayoḥ*). These provisions are made in:

A 1.1.33: **प्रथमचरमतयाल्पार्धकतिपयनेमाश्च।** (*prathamacaramatayālpārdhakatipayanemāś ca*)

A 1.1.34: **पूर्वपरावरदक्षिणोत्तरापराधराणि व्यवस्थायामसंज्ञायाम्।** (*pūrvaparāvara-dakṣiṇottarāparādharāṇi vyavasthāyām asaṁjñāyām*)

A 1.1.35: **स्वमज्ञातिधनाख्यायाम्।** (*svam ajñāti-dhanākhyāyām*)

A 1.1.36: **अन्तरम्बहिर्योगोपसंव्यानयोः।** (*antaram bahiryogopasaṁvyānayoḥ*)

Providing that an item has the class name *sarvanāman* or that it does not bear this name under given conditions allows operations associated with pronominal elements to apply as required. For example, after a pronominal base in *-a* the ending *ṅe* (dat. sg.) is replaced by *smai* (A 7.1.14 [492]), the ending *śI* substitutes for *jas* (nom. pl.: A 7.1.17), and the initial augment *suṭ* is added to the ending *ām* (gen. pl.: A 7.1.52 [498]). This last operation applies also after pronominals in *-ā*, of the type *sarvā* (fem.). In addition, if an ending marked with *ṅ* follows a pronominal in *-ā*, it receives the initial

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augment *syāṭ*, and the final vowel of the pronominal stem is replaced by short *-a* (A 7.3.114 [499]). These operations account for forms such as *sarvasmai, sarve* (< *sarva-i*), *sarveṣām* (< *sarve-sām* < *sarva-sām*), *sarvāsām, sarvasyai* (< *sarva-syāe* < *sarvā-e*), as opposed to *vṛkṣāya* (see 46), *vṛkṣāḥ* (< *vṛkṣa-as*), *vṛkṣāṇām* (< ... *vṛkṣa-nām* < *vṛkṣa-ām*), *ajānām* (< *ajā-ām*), *ajāyai* (< *ajā-āe* < *ajā-e*). By A 1.1.28, *uttarapūrvā* 'north-east' is optionally pronominal. Pāṇini thereby accounts for alternants such as *uttarapūrvasyai* and *uttarapūrvāyai*. On the other hand, *-anya* in *dvyanya* 'one in addition to whom there are two others' is denied membership in the sarvanāman class by A 1.1.29, since one has, e.g., *dvyanyāya*, not **dvyanyasmai*. Similarly, A 1.1.30 excludes *-pūrva* of *māsapūrva* 'earlier by a month' from the sarvanāman class: *māsapūrvāya*. In accordance with A 1.1.31-32, the grammar allows deriving only *pūrvāparāṇām* 'earlier and later ones', not also **pūrvāpareṣām*, but both *pūrvāpare* and *pūrvāparāḥ*. A 1.1.33-36 account for pairs such as *prathame / prathamāḥ, pūrve / pūrvāḥ, dakṣiṇe / dakṣiṇāḥ* (but only *dakṣiṇāḥ* 'clever'), *sve / svāḥ* 'of one's own', *antare / antarāḥ gṛhāḥ* 'houses that are outside (the city walls)'.

54 There is a large group of nominals, called *avyaya*, that includes several subgroups. By

A 1.1.37: **स्वरादिनिपातमव्ययम्।** (*svarādinipātam avyayam*)

A 1.1.38: **तद्धितश्चासर्वविभक्तिः।** (*taddhitaś cāsarvavibhaktiḥ*)

A 1.1.39: **कृन्मेजन्तः।** (*kṛn mejantaḥ*)

A 1.1.40: **क्त्वातोसुन्कसुनः।** (*ktvātosunkasunaḥ*)

A 1.1.41: **अव्ययीभावश्च।** (*avyayībhāvaś ca*)

the following have the class name *avyaya*:

A 1.1.37: members of the order set that begins with *svar* 'sun,

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heaven' and items called *nipāta* (*svarādinipātam*); some other items in the ordered set beginning with *svar* are *antar* 'within', *prātar* 'in the morning', *punar* 'again', *sanutar* 'off, aside', *uccais* 'high, loud', *nīcais* 'low, softly'; on the nipāta subgroup see 55.

A 1.1.38: a derivate that ends in a taddhita affix (*taddhitaḥ*: A 4.1.76 [70]) such that it cannot take all triplets of nominal endings (*asarvavibhaktiḥ*); for example, *tatas* 'thence, from that' and *tatra* 'there, in that, on that' contain the taddhita suffixes *tasil*, *tral* (A 5.3.7,10 [349]) and, in Pāṇini's system, can be followed only by an ending of the first triplet, a nominative ending.

A 1.1.39: a derivate in a kṛt affix (A 3.1.93 [66]) that ends in *m*, *e*, *o*, *ai*, or *au* (*mejantaḥ*); e.g., *svāduṁkāram* 'after sweetening', *dṛśe* 'to see'.

A 1.1.40: a derivate with any of the suffixes *ktvā*, *tosun*, *kasun*; e.g., *kṛtvā* 'after doing, making', *udetos* '(before) the rising (of the sun)', *visṛpas* '(before) crawling away'.

A 1.1.41: an avyayībhāva compound (A 2.1.5 [304]); e.g., *upāgni* 'near the fire'.

In general, a feminine affix *āp* or a nominal ending is dropped after an avyaya (A 2.4.82 [307]). For example, *tasyām* (< *tā-ām* < *tad-i*) of *tasyāṁ śālāyām* 'in that house' has a feminine affix *ṭāp* (A 4.1.4 [271]) and a locative ending, but *tatra* of the equivalent phrase *tatra śālāyām* has neither the feminine suffix nor an ending. In effect, most avyayas are indeclinable. But this is not true of all such items. Thus, after an avyayībhāva in *-a* an ending other than an ablative is replaced by *am*, but an ablative ending remains (A 2.4.83 [307]); e.g., *upakumbham* 'near the pot', *upakumbhāt* 'from near the pot'.

55 A 1.1.37 (54) provides that items called *nipāta* ('particle') belong to the avyaya class. The elements in question are given in rules of the section that begins with

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A 1.4.56: **प्राग्रीश्वरान्निपाताः।** (*prāg rīśvarān nipātāḥ*)

According to this sūtra, items referred to in subsequent rules, up to *-rīśvara-* (*prāg rīśvarāt*) of A 1.4.97 (see below), are called *nipāta* under the conditions given in these sūtras. By

A 1.4.57: **चादयोऽसत्त्वे।** (*cādayo'sattve*)

members of the ordered set that begins with *ca* 'and' (*cādayaḥ*) are assigned the name *nipāta*, provided they are not used with reference to a thing (*asattve*). Members of the set beginning with *pra* 'forth' (*prādayaḥ*) have this class name by

A 1.4.58: **प्रादयः।** (*prādayaḥ*)

In addition, according to

A 1.4.59: **उपसर्गाः क्रियायोगे।** (*upasargāḥ kriyāyoge*)

A 1.4.60: **गतिश्च।** (*gatiś ca*)

pra and the other items of the gaṇa connected with A 1.4.58 belong to two subclasses if they are connected with actions (*kriyāyoge*), that is, if they are linked directly to verbs: They are then called both *upasarga* ('preverb') and (*ca*) *gati*.

There are also members of the gati class that are not assigned to the upasarga class. For example,

A 1.4.61: **ऊर्यादिच्विडाचश्च।** (*ūryādicviḍācaś ca*)

provides that members of the set beginning with *ūrī* (as in *ūrī kṛ* 'accept') and derivates with *cvi* (A 5.4.50 [347]) or *ḍāc* also are assigned the class name *gati*. According to

A 1.4.67: **पुरोऽव्ययम्।** (*puro'vyayam*)

A 1.4.68: **अस्तञ्च।** (*astañ ca*)

A 1.4.71: **तिरोऽन्तर्धौ।** (*tiro'ntardhau*)

the following terms are classed as gati when linked with verbs: *puras*, if it is an avyaya --- that is, *puras* 'at the fore' and not *puras* 'city' (nom.-acc. pl., gen. sg.); the avyaya *astam* (see 207); *tiras*, provided it is used with reference to disappearance (*antardhau*), as in *tirobhūya* 'having dis-

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appeared, after disappearing', which contrasts with *tiro bhūtvā* 'after coming to the side'. By

A 1.4.72: **विभाषा कृञि।** (*vibhāṣā kṛñi*)

A 1.4.74: **साक्षात्प्रभृतीनि च।** (*sākṣātprabhṛtīni ca*)

tiras is optionally a gati when construed with *kṛñ* (e.g., *tiraskṛtya, tiras kṛtvā* 'after setting aside'), as are members of the group beginning with *sākṣāt* 'directly, face-to-face'.

The section of sūtras headed by A 1.4.56 includes also a subsection that begins with the heading

A 1.4.83: **कर्मप्रवचनीयाः।** (*karmapravacanīyāḥ*)

Items given in these rules have the name *karmapravacanīya* under the conditions specified. For example, according to

A 1.4.84: **अनुर्लक्षणे।** (*anur lakṣaṇe*)

anu is called *karmapravacanīya* if it is used to indicate that one thing is a cause which is characteristic (*lakṣaṇe*) of another, and

A 1.4.89: **आङ् मर्यादावचने।** (*āṅ maryādāvacane*)

assigns this class name to *āṅ* used in referring to a boundary (*maryādāvacane*). Again,

A 1.4.97: **अधिरीश्वरे।** (*adhir īśvare*)

provides that *adhi* used with respect to a master (*īśvare*), that is, when a master-possession relation is spoken of, is termed *karmapravacanīya*. Finally, by

A 1.4.98: **विभाषा कृञि।** (*vibhāṣā kṛñi*)

adhi is optionally (*vibhāṣā*) a karmapravacanīya if it is linked with *kṛ* (*kṛñi*). Since *adhi* is part of the set that begins with *pra*, it is then also optionally a gati.

The nipāta class thus includes subgroups of items called *upasarga, gati,* and *karmapravacanīya,* all of which are also included in the avyaya class. In addition, a nipāta that consists of a single vowel, with the exception of *āṅ,* belongs to the

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pragṛhya class (A 1.1.14 [76]).

After nipātas, as after most avyayas (54), nominal endings are dropped. Some other operations associated with the groups noted are as follows. Items of the set beginning with *pra* and members of the gati class form compounds with related terms (A 2.2.18 [315]); e.g., *prasthita* 'set out, gone', *prasthāya* 'after setting out', *ūrīkṛta* 'accepted', *ūrīkṛtya* 'after accepting'. The *s*- of certain verbs is replaced by *ṣ*- after upasargas that meet particular phonological specifications (A 8.3.65 [564]); e.g., *pari ṣuṇoti* 'presses juice out'. The *n*- of verbs taught with original *ṇ*- is replaced by *ṇ*- after upasargas that meet certain phonological conditions (A 8.4.14 [572]); e.g., *pra ṇamati* 'bows'. Most of the operations connected with members of the gati class have to do with accentuation. Thus, a gati retains its original accent in a tatpuruṣa compound where it is followed immediately by a derivate in *-kta* denoting an object (A 6.2.49 [603]), as in *prákṛta* 'begun, set forth'; a derivate with a kṛt affix retains its original accent in a tatpuruṣa compound where it follows a gati (A 6.2.139 [606]), as in *prakā́raka* 'one who accomplishes'. See also A 8.1.70 (615). Most karmapravacanīyas are syntactically linked with nominals, which take particular endings in such constructions. In general, a nominal linked with a karmapravacanīya is followed by a second-triplet (accusative) ending (A 2.3.8 [250]); e.g., *saṁhitām anu* 'consequent on (the recitation of) the saṁhitā'. However, some members of the karmapravacanīya class cooccur with other forms. For example, a seventh-triplet (locative) ending follows a nominal linked with a karmapravacanīya if that nominal denotes something in respect of which one speaks of a governing relation, and a nominal construed with *āṅ* takes fifth-triplet (ablative) endings (A 2.3.9-10); e.g., *adhi devadatte* 'in Devadatta's dominion', *ā pāṭaliputrāt* 'up to Pāṭaliputra'.

56 The term *nadī* --- which in ordinary Sanskrit means

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'river' --- is used as a class name referring to items characterized by their form, a gender feature, and certain grammatical contexts. According to

A 1.4.3: **यू स्त्याख्यौ नदी।** (*yū stryākhyau nadī*)

items that end in *ī* or *ū* (*yū*) and exclusively denote things qualified by femininity (*stryākhyau*) bear the name *nadī*, which is used also with reference to *-ī*, *-ū* of such items. For example, *kumārī* 'girl', *nadī* 'river', *brahmabandhū* 'a woman who is a Brāhmaṇa in name only', *yavāgū* 'gruel' belong to the nadī class by A 1.4.3. On the other hand, *grāmaṇī* 'village head' and *khalapū* 'one who cleans a threshing floor' do not: Although these terms may be used with reference to females, they do not of themselves signify things qualified by the property feminine. According to

A 1.4.4: **नेयङुवङ्स्थानावस्त्री।** (*neyaṅuvaṅsthānāv astrī*)

items that meet the conditions given in A 1.4.3, with the exception of *strī* 'female, woman' (*astrī*), are not (*na*) called *nadī* if their final vowels are subject to replacement by *-iy* and *-uv* (*iyaṅuvaṅsthānau*). However, items denied membership in the nadī class by A 1.4.4 are only optionally (*vā*) excluded from this class in a particular grammatical context, before *ām* (*āmi*):

A 1.4.5: **वामि।** (*vāmi*)

Such items also are optionally called *nadī* when they are followed by endings marked with *ṅi* (*ṅiti*), that is, before the endings *ṅe* (dat. sg.), *ṅasi* (abl. sg.), *ṅas* (gen. sg.), *ṅi* (loc. sg.). Further, in these contexts an item that ends in a short vowel (*hrasvaḥ*: A 1.2.27 [35]) *i* or *u* and denotes a feminine also (*ca*) has the class name *nadī*:

A 1.4.6: **ङिति ह्रस्वश्च।** (*ṅiti hrasvaś ca*)

For example, the *-ī* and *-ū* of *śrī* 'wealth, goddess of wealth', *strī*, and *bhrū* 'brow' are replaced by *-iy* and *-uv* before

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vowel-initial endings (A 6.4.77, 79, 80 [452, 500]). According to A 1.4.4-5, *śrī* and *bhrū* are denied membership in the nadī class except when they are followed by *ām*, in which case they are optionally nadī elements. According to A 1.4.6, not only such items in *-ī, -ū* but also terms like *kṛti* 'doing, deed, work' and *dhenu* 'cow' optionally are called *nadī* when they are followed by endings marked with *ṅi*. On the other hand, *strī* is not excluded from the nadī class in any of these contexts.

As I pointed out earlier (see 46), an ending marked with *ṅ* receives the initial augment *āṭ* after a nadī stem; e.g., *kumāryai, brahmabandhvai, kumāryāḥ* (< ... *kumārī-āas* < *kumārī-as*), *brahmabandhvāḥ*. The ending *ṅi* in particular is replaced by *ām* after a nadī stem (A 7.3.116 [497]), and this substitute is augmented with *āṭ*: *kumāryām, brahmabandhvām*. In addition, members of the nadī class have vocative singular forms with *-i, -u* instead of the corresponding long vowels (A 7.3.107 [483]): *kumāri, brahmabandhu*. Further, the ending *ām* receives the initial augment *nuṭ* when it follows a nadī stem (A 7.1.54 [498]): *kumārīṇām, brahmabandhūnām*. *strī* has forms of this type, so that it is never excluded from the nadī class: *stri* (voc.sg.), *striyai, striyāḥ, strīṇām, striyām*. Other nominals with *-ī, -ū* and *-iy, -uv* behave differently, however: *śrīḥ, bhrūḥ* (voc.sg.), *śriyai / śriye, bhruvai / bhruve, śriyāḥ / śriyaḥ, bhruvāḥ / bhruvaḥ, śrīṇām / śriyām, bhrūṇām / bhruvām, śriyām / śriyi, bhruvām / bhruvi*. Therefore, these are either totally excluded from or only optionally assigned to the nadī class, by A 1.4.4-6. In accordance with A 1.4.6, moreover, *kṛti* and *dhenu* optionally have the class name *nadī* when they occur before endings marked with *ṅ*: *kṛtyai, dhenvai, kṛtyāḥ, dhenvāḥ, kṛtyām, dhenvām*. Such forms alternate with *kṛtaye, dhenave*, and others, on which see 57.

57 Certain items in *-i* and *-u* constitute a remainder (*śeṣaḥ*) in respect of those that belong to the nadī class by A 1.4.6 (56). First, there are non-feminine nominals that end in these vowels. In addition, terms like *kṛti* and *dhenu* are only

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optionally nadī bases by A 1.4.6, so that they are alternatively not members of the class. According to

A 1.4.7: **शेषो घ्यसखि** (*śeṣo ghy asakhi*)

items in *-i, -u* that make up this remainder, with the exception of *sakhi* 'friend' (*asakhi*), have the class name *ghi*. Thus, for example, *agni* 'fire, Agni' and *vāyu* 'wind, Vāyu' belong obligatorily to the ghi class, *kṛti* and *dhenu* only optionally belong to this class, and *sakhi* is excluded from the ghi set.

The *-i* and *-u* of ghi bases are replaced by the guṇa vowels (A 1.1.2 [9]) *e, o* before endings marked with *ṅi* (A 7.3.111 [484]): *agnaye* (< *agne-e* < *agni-e*), *vāyave, agneḥ* (< *agne-as* < *agni-as*), *vāyoḥ*. The ending *ṅi* in particular is replaced by *au* after a ghi base, the final vowel of which is simultaneously replaced by *a* (A 7.3.119 [497]): *agnau* (< *agna-au* < *agni-i*), *vāyau*. Since *kṛti* and *dhenu* optionally belong to the ghi class, rules apply to derive *kṛtaye, dhenave, kṛteḥ, dhenoḥ, kṛtau, dhenau* in addition to *kṛtyai, dhenvai*, and other forms of the nadī type (see 56). On the other hand, *sakhi* differs from both these types: *sakhye, sakhyuḥ, sakhyau*. This base is therefore excluded from the ghi class.

58 The noun *pati* 'master, husband' meets the conditions for being a member of the ghi class by A 1.4.7 (57). However, it does not always behave in the manner of such an element. One does have, for example, *prajāpataye, prajāpateḥ, prajāpatau* from *prajāpati* 'lord of creatures', but from *pati* by itself one has *patye, patyuḥ, patyau*. Hence,

A 1.4.8: **पतिः समास एव** (*patiḥ samāsa eva*)

provides that *pati* has the class name *ghi* only when it occurs in a compound (*samāsa eva*: A 2.1.3 [26]).

59 Nominal bases such as *eka* 'one', *dvi* 'two', *tri* 'three', *catur* 'four', *pañcan* 'five' are number words (*saṅkhyā*), associated with particular operations. For example, they form derivates, with the suffix *dhā* that denote a manner of doing

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something (A 5.3.42 [347]) in so many ways and other derivates, with *kṛtvasuc, suc* (A 5.4.17-19), used in counting the number of times an act is performed: *ekadhā* 'in one way', *sakṛt* 'once', *dvidhā* 'in two ways', *dvis* 'twice', *tridhā, tris, caturdhā, catus, pañcadhā, pañcakṛtvas,* and so on. The terms *bahu* 'much, many', *gaṇa* 'great number', and derivates such as *tāvat* 'that much, that many', *kati* 'how many?' behave like ordinary number words in that they form derivates such as those shown: *bahudhā, bahukṛtvas, gaṇadhā, gaṇakṛtvas, tāvaddhā, tāvatkṛtvas, katidhā, katikṛtvas.* Therefore, in

A 1.1.23: **बहुगणवतुडति सङ्ख्या।** (*bahugaṇavatuḍati saṅkhyā*)

Pāṇini provides that *bahu, gaṇa,* and derivates with the suffixes *vatu, ḍati* are called *saṅkhyā.*

60 The term *ṣaṣ,* which in ordinary Sanskrit means 'six', is used as a class name for certain number words (*saṅkhyā*). According to

A 1.1.24: **ष्णान्ता षट्।** (*ṣṇāntā ṣaṭ*)

A 1.1.25: **डति च।** (*ḍati ca*)

a number word that ends in *-ṣ* or *-n* (*ṣṇāntā* [*saṅkhyā*]) is called *ṣaṣ,* and a derivate with *ḍati* also (*ca*) has this class name. The bases *ṣaṣ* 'six', *pañcan* 'five', *saptan* 'seven', *aṣṭan* 'eight', *navan* 'nine', *daśan* 'ten' and derivates such as *kati* belong to this class. After ṣaṣ elements, the first- and second-triplet endings *jas, śas* (nom., acc. pl.) are deleted (A 7.1.22 [494]): *ṣaṭ* (< *ṣaṣ* < *ṣaṣ-as*), *pañca* (< *pañcan* < *pañcan-as*), *kati* (< *kati-as*).

61 *Vṛddha,* which means 'grown, strong, aged' in ordinary Sanskrit, is used in the Aṣṭādhyāyī as a technical term for a class of items in part characterized phonologically. By

A 1.1.73: **वृद्धिर्यस्याचामादिस्तद् वृद्धम्।** (*vṛddhir yasyācām ādis tad vṛddham*)

an item the first (*ādiḥ*) of whose (*yasya*) vowels (*acām*) is a

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vṛddhi segment (A 1.1.1 [9]) is called *vṛddha* (*tad vṛddham*), and according to

A 1.1.74: **त्यदादीनि च।** (*tyadādīni ca*)

items of the ordered subset beginning with *tyad* 'that' (*tyadādīni*) --- part of the set that begins with *sarva* (A 1.1.27 [53]) --- also (*ca*) have the class name *vṛddha*. These items are associated with particular affixes. For example, the taddhita affix *cha* follows padas (A 1.4.14 [49]) with vṛddha elements, to form derivates such as *śālīya* 'pertaining to the house', *tadīya* 'pertaining to that' (A 4.2.114 [343]).

62 Compounds (*samāsa*: A 2.1.3 [26]) make up a large group of derived nominal bases (*prātipadika*: A 1.2.46 [48]). There are four major classes of compounds, to which the class names *avyayībhāva, tatpuruṣa, bahuvrīhi,* and *dvandva* are assigned by rules. The tatpuruṣa group includes two subgroups of compounds, called *dvigu* and *karmadhāraya*. See Section 2.4.2.3.

63 Verb affixes are divided into two major groups by

A 3.4.113: **तिङ्शित्सार्वधातुकम्।** (*tiṅ śit sārvadhātukam*)

A 3.4.114: **आर्धधातुकं शेषः।** (*ārdhadhātukaṁ śeṣaḥ*)

In general, a verb ending (*tiṅ*) or a verbal affix with the marker *ś* (*śit*) is called *sārvadhātuka,* and any remaining (*śeṣaḥ*) verb affix has the class name *ārdhadhātuka*. According to

A 3.4.115: **लिट् च।** (*liṭ ca*)

A 3.4.116: **लिङाशिषि।** (*liṅ āśiṣi*)

however, certain verb endings are assigned to the ārdhadhātuka class: those that replace the L-suffix *liṭ* (A 3.2.115 [233]) and those that derive from *liṅ* introduced on condition that a wish is expressed (*āśiṣi*: A 3.3.173), what western grammarians call perfect and precative endings. Further, in the domain of Vedic literature (*chandasi*) verb

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affixes in general may behave in both ways (*ubhayathā*, see A 1.1.44 [31]):

A 3.4.117: **छन्दस्युभयथा।** (*chandasy ubhayathā*)

That is, an operation normally associated with one set of affixes may be linked with another in Vedic usage, so that these affixes are allowed to be both sārvadhātuka and ārdhadhātuka units so far as this usage is concerned.

The suffix *śap* follows a verb such as *bhū* 'be, become' if this occurs with a sārvadhātuka that signifies an agent (A 3.1.68 [157]), as in *bhavati* (3sg. pres. ind. < *bho-a-ti* < *bhū-a-ti* < *bhū-ti*), *bhavet* (3sg. opt.). *śap* is not introduced to derive forms such as *babhūva* (3sg. pfct. act.) or *bhūyāt* (3sg. prec. act.), whose endings are assigned to the ārdhadhātuka class. Ārdhadhātuka affixes also determine the occurrence of certain suppletive verbs. For example, instead of *as*, *bhū* occurs with ārdhadhātuka affixes (A 2.4.52 [380]), as in *bhavitum* (inf.), *bhūti* 'being'. On the other hand, in Vedic one finds an action noun *asti* in *svasti* (dat. sg. *svastaye*) 'well being', derived with the same suffix (*ktin*: A 3.3.94 [114]) as in *bhūti*. To account for such usage, this affix is allowed to belong not only to the ārdhadhātuka class but also to the sārvadhātuka group, as far as Vedic usage is concerned, so that it does not necessarily determine suppletion. The affixes *śap* and *yak* (A 3.1.67 [156]) are respectively sārvadhātuka and ārdhadhātuka elements by A 3.4.113-114, in accordance with examples such as *vardhayantu* (< *vardhi-a-antu*) 'may they make ... strong', *vardhyate* (< *vardhi-ya-te*) '... is made strong': The causative suffix *ṇic* is deleted before an ārdhadhātuka affix that does not have the initial augment *iṭ* (A 6.4.51[450]). To account for Vedic items such as *vardhantu*, equivalent in meaning to *vardhayantu* but without the causative suffix of the latter, *śap* is allowed to be an ārdhadhātuka affix so far as Vedic usage is concerned.

64 Pāṇini operates with ten abstract L-affixes (*lakārāḥ* 'ls'),

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replaced by verb endings or participial affixes (see 232-233, 262]). These replacements are sārvadhātuka or ārdhadhātuka elements (see 63). They also belong to one of two other classes by

A 1.4.99: **लः परस्मैपदम्।** (*laḥ parasmaipadam*)

A 1.4.100: **तङानावात्मनेपदम्।** (*taṅānāv ātmanepadam*)

The endings *tā ātām jha thās āthām dhvam iṭ vahi mahiṅ* (denoted by the abbreviation *taṅi*) and the participial affixes *śānac, kānac* (*taṅānau*) are called *ātmanepada*. Other replacments of any L-affix (*laḥ*), including the endings *tip tas jhi sip thas tha mip vas mas*, are called *parasmaipada*. The eighteen basic verb endings that replace L-affixes are thus divided into two major groups: nine parasmaipada and nine ātmanepada endings.

Each of these groups is subdivided into three triplets, as shown in figure A (p. 42). According to

A 1.4.101: **तिङस्त्रीणि त्रीणि प्रथममध्यमोत्तमाः।** (*tiṅas trīṇi trīṇi prathamamadhyamottamāḥ*)

the basic endings *tip* through *mahiṅ* (*tiṅaḥ*), taken three by three (*trīṇi trīṇi*), are called *prathama, madhyama, uttama*, so that members of respective triplets have these class names. In addition, these endings (*tāni*) taken singly (*ekaśaḥ*) within each triplet have the class names *ekavacana, dvivacana* and *bahuvacana*, respectively:

A 1.4.102: **तान्येकवचनद्विवचनबहुवचनान्येकशः।**

(*tāny ekavacanadvivacanabahuvacanāny ekaśaḥ*)

For example, *tip tas jhi* make up the prathama triplet of the parasmaipada group of basic endings, and these affixes are respectively called *ekavacana, dvivacana, bahuvacana*. On rules concerning members of the classes noted, see 138-143, 234.

65 Verb endings (see 64 with Figure A) also (*ca*) have the class name *vibhakti*, by

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FIGURE A: BASIC VERB ENDINGS (64):

	एकवचनम् (*ekavacanam*)	द्विवचनम् (*dvivacanam*)	बहुवचनम् (*bahuvacanam*)
परस्मैपदम् (*parasmaipadam*)			
प्रथमः (*prathamaḥ*)	तिप् *tip*	तस् *tas*	झि *jhi*
मध्यमः (*madhyamaḥ*)	सिप् *sip*	थस् *thas*	थ *tha*
उत्तमः (*uttamaḥ*)	मिप् *mip*	वस् *vas*	मस् *mas*
आत्मनेपदम् (*ātmanepadam*)			
प्रथमः (*prathamaḥ*)	त *ta*	आताम् *ātām*	झ *jha*
मध्यमः (*madhyamaḥ*)	थास् *thās*	आथाम् *āthām*	ध्वम् *dhvam*
उत्तमः (*uttamaḥ*)	इट् *iṭ*	वहि *vahi*	महिङ् *mahiṅ*

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A 1.4.104: **विभक्तिश्च।** (*vibhaktiś ca*)

Consequently, the final consonants of *tas, thas, vas, mas, ātām, dhvam* are not classed as markers (*it*: A 1.3.4 [80]), so that they are not subject to immediate deletion (A 1.3.9 [81]). See also 67, 71.

66 An affix (*pratyaya*: A 3.1.1 [15]) introduced by a sūtra of the section headed by

A 3.1.91: **धातोः।** (*dhātoḥ*)

occurs with a verb (*dhātoḥ*: A 1.3.1, 3.1.32 [47]). According to

A 3.1.93: **कृदतिङ्।** (*kṛd atiṅ*)

any affix provided for in this section of rules, other than a verb ending (*atiṅ*), is called *kṛt*. The set of kṛt affixes includes several subgroups. Affixes introduced by sūtras of the section beginning with

A 3.1.95: **कृत्याः।** (*kṛtyāḥ*)

are called *kṛtya*. The participial suffixes *śatṛ* and *śānac* (A 3.2.124–126 [262]) have the class name *sat* by

A 3.2.127: **तौ सत्।** (*tau sat*)

In addition, according to

A 1.1.26: **क्तक्तवतू निष्ठा।** (*ktaktavatū niṣṭhā*)

the suffixes *kta* and *ktavatu* are called *niṣṭhā*.

Kṛt affixes in general serve to form derived nominal bases (*prātipadika*: A 1.2.46 [48]). These derivates usually denote agents (A 3.4.67 [248]) and involve no specific time reference. For example, *kartṛ* and *kāraka*, with the kṛt suffixes *tṛc* and *ṇvul* (A 3.1.133), can refer to anyone that does or makes something at any time. Particular kṛt affixes, however, form derivates of different kinds. Derived bases with kṛtya affixes generally denote objects of acts or abstract acts themselves (A 3.4.70). For example, *kartavya*, with the suffix *tavya* (A 3.1.96 [121]), is used with reference to

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something that is to be done or made. In addition, niṣṭhā suffixes are introduced if an act is referred to the past (A 3.2.102 [294]); e.g., *kṛta* (nom. sg. masc. *kṛtaḥ*) 'done, made', *kṛtavat* (nom. sg. masc. *kṛtavān*) 'one who has done, made something'. Further, suffixes called *sat* can replace the L-affix *lṛṭ*, which is introduced when an act is referred to the future (A 3.3.14 [262]).

67 A major group of post-nominal affixes is made up of nominal endings. There are twenty-one basic endings (A 4.1.2 [241]), distributed among seven triplets as shown in Figure B (p. 45). Pāṇini uses the terms *prathamā* 'first', *dvitīyā* 'second', *tṛtīyā* 'third', *caturthī* 'fourth', *pañcamī* 'fifth', *ṣaṣṭhī* 'sixth', *saptamī* 'seventh' to refer to endings of these triplets (see 240), but he does not introduce these terms by saṁjñāsūtras of the Aṣṭādhyāyī. It is reasonable to accept that Pāṇini took over these terms from an earlier grammatical tradition and that they were so well known that he could assume students of his grammar would understand them. By

A 1.4.103: सुपः। (*supaḥ*)

the first, second, and third endings in each triplet of nominal endings (*supaḥ* [nom.pl.]) are called *ekavacana, dvivacana,* and *bahuvacana,* respectively, just as are members of triplets of verb endings (A 1.4.102 [64]). Moreover, nominal endings also have the class name *vibhakti* by A 1.4.104 (65). Hence, the final consonants of endings such as *jas, am, śas* are not classed as markers, so that they are not immediately deleted (A 1.3.4, 9 [80-81]).

Nominal vibhaktis are also associated with particular operations. For example, before such elements the final sounds of bases in the ordered set that begins with *tyad* 'that' are replaced by *-a* (A 7.2.102 [476]): *tyad-am* > *tyaa-am* > *tya-am* > *tyam* (acc. sg. masc.).

68 A nominal ending of the first triplet used in addressing someone (*sambodhane*: A 2.3.47 [240]) has a special status.

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FIGURE B: BASIC NOMINAL ENDINGS (67)

	एकवचनमम् (*ekavacanam*)	द्विवचनम् (*dvivacanam*)	बहुवचनम् (*bahuvacanam*)
प्रथमा (*prathamā*)	सु *su*	औ *au*	जस् *jas*
द्वितीया (*dvitīyā*)	अम् *am*	औट् *auṭ*	शस् *śas*
तृतीया (*tṛtīyā*)	टा *ṭā*	भ्याम् *bhyām*	भिस् *bhis*
चतुर्थी (*caturthī*)	ङे *ṅe*	भ्याम् *bhyām*	भ्यस् *bhyas*
पञ्चमी (*pañcamī*)	ङसि *ṅasi*	भ्याम् *bhyām*	भ्यस् *bhyas*
षष्ठी (*ṣaṣṭhī*)	ङस् *ṅas*	ओस् *os*	आम् *ām*
सप्तमी (*saptamī*)	ङि *ṅi*	ओस् *os*	सुप् *sup*

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Such an ending (*sā* 'that one') is called *āmantrita,* and the ekavacana ending of this triplet so used has the class name *sambuddhi*:

A 2.3.48: **सामन्त्रितम्।** (*sāmantritam*)

A 2.3.49: **एकवचनं सम्बुद्धिः।** (*ekavacanaṁ sambuddhiḥ*)

Items that terminate with an āmantrita are associated with several accentual properties. For example, the first vowel of such an item is high-pitched in utterance-initial position (A 6.1.198 [609]), but this does not result in the lack of a high-pitched vowel in a following verb form (A 8.1.72 [618]). Moreover, if an āmantrita occurs elsewhere than at the beginning of an utterance it has no high-pitched vowel (A 8.1.19 [615]). A sambuddhi ending is connected with other kinds of operations. For example, the nadī elements *-ī, -ū* (see 56) are replaced by short *-i, -u* before a sambuddhi ending, which is itself deleted after *e, o,* and short vowels (A 6.1.69 [467]): *kumāri, brahmabandhu, deva* 'god, lord'. A sambuddhi ending also conditions the substitution of the guṇa vowels (A 1.1.2 [9]) *-e, -o* for *-i, -u* that do not result from shortening (A 7.3.108 [484]); e.g., *agne* 'fire, Agni' (< *agne-s* < *agni-s*), *vāyo* 'wind, Vāyu'.

69 Another subgroup of nominal endings is called *sarvanāmasthāna.* According to

A 1.1.42: **शि सर्वनामस्थानम्।** (*śi sarvanāmasthānam*)

śi, which replaces *jas* and *śas* after neuter stems (A 7.1.20 [493]), has the name *sarvanāmasthāna,* and by

A 1.1.43: **सुडनपुंसकस्य।** (*suḍ anapuṁsakasya*)

the same class name is given to *su au jas am auṭ* (*suṭ*), provided the ending in question is linked with a non-neuter (*anapuṁsakasya*) nominal.

Sarvanāmasthāna endings are contexts for several operations. Before such an ending, the augment *num* is added

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after the last vowel of a neuter stem that ends in a vowel, a non-nasal stop, or a spirant (A 7.1.72 [488]); e.g., *vana-i* › *vanan-i*, *chandas-i* › *chandans-i*. In addition, before a sarvanāmasthāna ending other than one called *sambuddhi* (A 2.3.49 [68]), the penultimate vowel of a stem in *-n* is replaced by a long vowel (A 6.4.8 [469]), as is also a vowel preceding the *n* of a stem-final cluster *-ns* (A 6.4.10): *vanan-i* › *vanāni* (nom.-acc .pl.) 'forests', *chandans-i* › *chandāns-i* › *chandāṁsi* (A 8.3.24 [559]) 'meters'. Similarly, the penultimate *-a-* of *rājan* 'king' is replaced by *-ā-* when this base is followed by a sarvanāmasthāna ending other than a sambuddhi: *rājā* ([nom. sg.] ‹ *rājān* ‹ *rājan* ‹ *rājan-s*), *rājānau* ([nom.-acc. du.] ‹ *rājan-au*), *rājānam* ([acc. sg.] ‹ *rājan-am*), *rājānaḥ* ([nom. pl.] ‹ *rājan-as*), but vocative singular *rājan* (‹ *rājan-s*).

70 There is a large section of sūtras that begins with the heading

A 4.1.76: **तद्धिताः।** (*taddhitāḥ*)

and extends to the end of the fifth adhyāya. Affixes (*pratyaya*: A 3.1.1 [15]) introduced by rules of this section are called *taddhita*. They occur with both nominal and verbal elements, including padas (A 1.4.14 [49]). See Section 2.4.2.4.

71 Nominal and verbal endings are called *vibhakti* (A 1.4.104 [65, 67]), but the vibhakti class does not consist of these alone. It also includes a group of taddhita affixes (A 4.1.76 [70]). According to

A 5.3.1: **प्राग्दिशो विभक्तिः।** (*prāg diśo vibhaktiḥ*)

an affix introduced by a subsequent sūtra, prior to (*prāk*) A 5.3.27: **दिक्शब्देभ्यः°** (349), the first term of which contains *diś-* (abl.sg. *diśaḥ*), has the class name *vibhakti*. Operations linked to other vibhaktis are associated with these also. For example, the *-d* of *tad* 'that' is replaced by *-a* not only before an ending such as *am* (acc.sg.) but also before a taddhita suffix such as *tas* (A 5.3.7): *tam* (‹ *ta-am* ‹ *taa-am* ‹ *tad-am*),

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tatas 'from that, thence' (< *taa-tas* < *tad-tas*).

72 Two groups of taddhita affixes (A 4.1.76 [70]) are called *tadrāja*. According to

A 4.1.174: **ते तद्राजाः।** (*te tadrājāḥ*)

those (*te*) affixes introduced by preceding sūtras, from A 4.1.168 (335) on, have this class name, and by

A 5.3.119: **ञ्यादयस्तद्राजाः।** (*ñyādayas tadrājāḥ*)

a group of affixes, beginning with *ñya* (*ñyādayaḥ*: A 5.3.112 [356]), introduced in previous sūtras are called *tadrāja*. A tadrāja affix is deleted in non-feminine plural forms (A 2.4.62 [465]) such as *pañcālāḥ* 'Pañcālas', *lohadhvajāḥ* 'members of the red-flag gang'; the affixes *añ* and *ñya* appear in the singular forms *pāñcālaḥ, lauhadhvajaḥ*.

73 Another subset of taddhita affixes consists of the comparative suffix *tarap* and the superlative suffix *tamap* (A 5.3.55-58 [356]). By

A 1.1.22: **तरप्तमपौघः।** (*taraptamapau ghaḥ*)

these have the class name *gha*. Several operations are connected with gha affixes. For example, the suffix *āmu* is obligatorily introduced after certain derivates with these elements (A 5.4.11 [357]), as in *pacatitarām* '... cooks quite well', *pacatitamām* '... cooks exceedingly well', *uccaistarām* 'quite high, higher', *uccaistamām* 'exceedingly high, highest'.

74 An affix that consists of a single sound (*ekāl*) is called *apṛkta*:

A 1.2.41: **अपृक्त एकाल्प्रत्ययः।** (*apṛkta ekāl pratyayaḥ*)

For example, the endings *su, t* (< *ti*), *s* (< *si*) of *kumārī-s, ajā-s, ahan-s, ahan-t* are apṛkta elements, subject to deletion (A 6.1.68 [404]): *kumārī* (nom. sg.) 'girl', *ajā* 'she goat', *ahan* (2,3 sg. impfct.) 'killed'.

75 An item called *pada* by A 1.4.14 (49) terminates in a nominal or verbal ending. This is a syntactic word, associated with certain operations. In particular, specified replacements

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apply to pada-final sounds; for example, non-nasal stops and spirants are replaced by voiced unaspirated stops (A 8.2.39 [546]), and *-R* substitutes for *-s* (A 8.2.66 [551]). Such operations, however, do not affect only segments of items that terminate in endings. Some apply also to sounds of elements that precede particular affixes. Hence, Pāṇini assigns to the pada class items followed by specified affixes. According to

A 1.4.17: **स्वादिष्वसर्वनामस्थाने।** (*svādiṣv asarvanāmasthāne*)

an item is called *pada* if it occurs before *su* and other (*svādiṣu*) affixes introduced in sūtras of the fourth and fifth adhyāyas, starting with A 4.1.2 (241), provided the suffix in question does not belong to the sarvanāmasthāna set (*asarvanāmasthāne*: A 1.1.42-43 [69]). For example, *ṣaṣ-* in *ṣaṣ-bhis* (instr. pl.) is a pada, so that its *-ṣ* is replaced by *-ḍ*: *ṣaḍbhis* 'six'. Similarly, the *-s* of *chandas-* in *chandas-bhis* is a pada-final sound, so that it is replaced by *-R*: *chandas-bhis* > *chandar-bhis* > *chandaü-bhis* (A 6.1.114 [525]) > *chandobhis* (A 6.1.87 [528]) 'meters'.

Nevertheless, not all suffixes referred to in A 1.4.17 condition operations that regularly apply to pada-final sounds. Moreover, items are subject to different operations when they precede certain affixes of this group. Hence, Pāṇini recognizes another class. According to

A 1.4.18: **यचि भम्।** (*yaci bham*)

an item followed by *y-* or the initial vowel (*yaci*) of an affix referred to in the preceding sūtra is called *bha* instead of *pada*. For example, *chandas-* in *chandas-ā*, with the ending *ṭā* (instr. sg.), is a bha element, so that its *-s* is not subject to replacement by *-r*: *chandasā*. Similarly, the *-t* of *bhavat-* 'you' in *bhavatā* is not replaced by *-d* before *ṭā*.

On the other hand, *bhavadīya* 'your' does have *bhavad-*, with *-d*, before *īya* (A 4.2.115, 7.1.2 [344, 509]), although this suffix is one of those referred to in A 1.4.17 and does begin

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with a vowel. By

A 1.4.16: **सिति च।** (*siti ca*)

an item followed by an affix marked with *s* (*siti*) also (*ca*) is called *pada*. Contrary to A 1.4.18, then, *bhavat-* in *bhavat-īya* is a pada, so that its *-t* is replaced by *-d*. The affix *chas* is marked with *s*. In addition,

A 1.4.15: **नः क्ये।** (*naḥ kye*)

provides that an item which ends in *-n* (*naḥ*) has the class name *pada* if it occurs before an element *kya* (*kye*). Since the affixes in question, such as *kyac* and *kyañ* (A 3.1.8,10,11,19 [283]), are introduced to padas in the first place, A 1.4.15 is, in effect, a restrictive rule, whereby only items in *-n* are classed as padas before *kya*. Thus, the *-n* of *rājan-* in *rājan-ya* is deleted (A 8.2.7 [539]): *rājan-ya* > *rāja-ya* > *rāji-ya* (A 7.4.33 [485]) 'wish a king for oneself'; but the final consonant of *namas-* in *namas-ya* 'do obeisance' is not replaced by *-R* (A 8.2.66 [551]).

1.1.2.1.2c. The pragṛghya class.

76 Pāṇini operates with a class of elements called *pragṛhya*. Although operations associated with these items are phonological, the defining characteristics of members of the pragṛhya set are not strictly phonological. Thus, according to

A 1.1.11: **ईदूदेद्द्विवनम्प्रगृह्यम्।** (*īdūded dvivacanam pragṛhyam*)

a dvivacana affix (A 1.4.102-103 [64, 67]) that ends in *-ī, -ū,* or *-e* (*īdūdet*) has the class name *pragṛhya*. For example, the *-ī, -ū, -e* of the nominative-accusative duals *agnī* (< *agni-au*) 'fires', *vāyū* (< *vāyu-au*) 'winds', *māle* (< *mālā-ī* < *mālā-au*) 'garlands', and the ending *āte* (3du. mid.) of *āsāte* 'are seated' are pragṛhya elements. By

A 1.1.12: **अदसो मात्।** (*adaso māt*)

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a vowel *I Ū e* that follows the *m* (*māt*) of a form of *adas* 'that' (*adasaḥ*) is called *pragṛhya*. The *-ī* of *amī* ([nom. pl.] < *ame* < *ade* < *ada-ī* < *ada-as* < *adaa-as* < *adas-as*) and the *-ū* of *amū* ([nom.-acc. du.] < *adau* < *ada-au* < *adaa-au* < *adas-au*) are thereby pragṛhya elements.

Of the other saṁjñāsūtras that concern the pragṛhya class, it will suffice to consider here the following:

A 1.1.14: **निपात एकाजनाङ्।** (*nipāta ekāj anāṅ*)

A 1.1.15: **ओत्।** (*ot*)

A 1.1.16: **सम्बुद्धौ शाकल्यस्येतावनार्षे।** (*sambuddhau śākalyasyetāv anārṣe*)

A 1.1.19: **ईदूतौ च सप्तम्यर्थे।** (*Idtūtau ca saptamyarthe*)

A particle (*nipātaḥ*: 55) consisting of a single vowel (*ekāc*), with the exception of *ā* marked with *ṅ* (*anāṅ*), is *pragṛhya*, as is a particle that ends in *-o* (*ot*). *ā* 'slightly', the preverb *ā*, and the particle *ā* 'up to' are excluded from the pragṛhya class, but *ā* that is used when one remembers something is included in this group, as is a particle such as *aho* 'oh'. According to Śākalya (*śākalyasya* [*matena*]), an *-o* (*ot*) that is conditioned by a following sambuddhi ending (*sambuddhau*: A 2.3.49 [68]) is *pragṛhya* when it occurs before the citation particle *iti* (*itau*), provided this particle is not included in an original Vedic text (*anārṣe*); that is, the *-o* of an item such as *vāyo* is treated as a pragṛhya element in Śākalya's analyzed text (*padapāṭha*) corresponding to the continuously recited text (*saṁhitāpāṭha*) of the Rigveda, and in Śākalya's padapāṭha such an item is followed by *iti*. Finally, elements in *-ī, -ū* (*Idūtau*) are *pragṛhya* if they are used of themselves in the sense of locatives (*saptamyarthe*); e.g., *gaurī* (loc.sg.) 'she buffalo' is a pragṛhya item.

As can be seen from the above, Pāṇini's pragṛhya class consists mostly of grammatical elements, but the class is associated with phonological operations: A pragṛhya element

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remains in its original form before vowels, exempt from substitutions that would usually apply in such contexts (A 6.1.125 [535]).

1.1.2.1.2d. Classes whose members are not linguistic units.

77 Pāṇini also operates with classes whose members are not linguistic items. To describe major aspects of Sanskrit syntax, he recognizes six categories to which are assigned direct participants in acts (*kāraka*), under conditions that are both semantic and syntactic. A given kāraka can thereby have one of the following class names: *apādāna, sampradāna, karaṇa, adhikaraṇa, karman, kartṛ*; see 214.

78 To provide for the derivation of nominal bases meaning 'child, offspring, descendant of', Pāṇini operates with three categories of descendants. According to

A 4.1.162: **अपत्यम्पौत्रप्रभृति गोत्रम्।** (*apatyam pautraprabhṛti gotram*)

a descendant (*apatyam* 'offspring, descendant') of a person P, starting with P's grandson (*pautraprabhṛti*), is called *gotra*. However, not every such descendant is a gotra. Thus, for example,

A 4.1.163: **जीवति तु वंश्ये युवा।** (*jīvati tu vaṁśye yuvā*)

A 4.1.164: **भ्रातरि च ज्यायसि।** (*bhrātari ca jyāyasi*)

provide; contrary to A 4.1.162 (*tu* 'but'), that a descendant of a P from his grandson on has the class name *yuvan* instead of *gotra* if an elder representing the line (*vaṁśye*) is still living (*jīvati*) or if a descendant's older brother (*bhrātari jyāyasi*) is alive to represent the line in the absence of another elder. These sūtras concern descendants from the third generation on. A direct descendant of a P is referred to by *apatya*, a term

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known from ordinary Sanskrit. To illustrate the above, let us consider the line founded by Garga. A son of Garga bears the patronymic *gārgi* (< *garga-as-i*: A 4.1.95 [332]). Descendants of Garga from his grandsons on have either the gotra patronymic *gārgya* (A 4.1.105 [335]) or the yuvan patronymic *gārgyāyaṇa* (A 4.1.101), and the male descendants collectively are called *gargāḥ* (A 2.4.64 [465]). The oldest grandson of Garga who remains alive as a respresentative of the line is called *gārgya*; his sons, his brothers, and their sons are called *gārgyāyaṇa*. Upon the death of the gotra descendant in question, the next oldest brother is consecrated as representative of the line, so that he takes on the gotra patronymic *gārgya*, and so on.

1.1.2.1.2e. Terms for zero.

79 Pāṇini operates with zero and recognizes particular zero replacements that have different effects. According to

A 1.1.60: **अदर्शनं लोपः।** (*adarśanaṁ lopaḥ*)

zero in general (*adarśanam* 'not being perceived', that is, not occurring) is called *lopa*, and by

A 1.1.61: **प्रत्ययस्य लुक्श्लुलुपः।** (*pratyayasya lukślulupaḥ*)

the terms *luk*, *ślu*, and *lup* designate in particular zero replacements for whole affixes (*pratyayasya*: A 3.1.1 [15]). For example, the ending *su* is deleted after the consonant of the base *gomatu* 'one who has many cows' in deriving the nominative singular masculine form *gomān*: *gomat-s* > *gomat* (A 6.1.68 [404]) > *gomāt* (A 6.4.14 [469]) > *gomānt* (A 7.1.70 [488]) > *gomān* (A 8.2.23 [542]). As can be seen, certain operations apply even after *su* has been dropped (A 1.1.62 [103]). *gomat-* as a component in the compound *gomatpriya* 'a person to whom someone with cows is dear' also derives from *gomat-su*, but operations that allow deriving *gomān* should not

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apply here. They do not, because the zero that replaces the ending now is denoted by *luk* (A 2.4.71 [278]), so that any operation which would apply to the stem of the affix *su* does not apply to it after the ending is deleted (A 1.1.63 [103]). Similarly, the *-d* of *tad* 'that' (nom.-acc.nt.sg. < *tad-s, tad-am*: A 7.1.23 [495])) is not replaced by *-a* as though the stem were followed by an ending (A 7.2.102 [476]): Pāṇini lets zero denoted by *luk* substitute for *su* and *am* after a neuter stem. An affix is also deleted in deriving *mārṣṭi* 'wipes, cleans' from *mṛj-ti* : *mṛj-ti* > *mṛj-a-ti* (affix *śap* : A 3.1.68 [157]) > *mṛj-ti* (A 2.4.72 [158]) > *mārj-ti* (A 7.2.114 [415]) > ... *mārṣṭi*. The ending *tip* conditions vṛddhi substitution in the stem *mṛj-*, but the ending *tas* does not (A 1.2.4 [513]): *mṛṣṭaḥ* 'they two are wiping, cleaning'. Now, if the operation that could be conditioned by *śap* were allowed to apply even after this suffix is dropped, one would derive **mārṣṭaḥ* instead of *mṛṣṭaḥ*. The zero that replaces this affix, however, is denoted by *luk*, so that the operation that would apply to the stem does not take effect. Once the suffix *śap* has been replaced by the particular zero denoted by *ślu* (A 2.4.75 [158]), doubling applies to a verbal base (A 6.1.10 [382]); e.g., *juhoti* 'offers oblations' (< ... *hu-ti*).

1.1.2.1.2f. Markers and abbreviatory terms.

80 Pāṇini's grammar was originally transmitted orally, so that Pāṇini could not use certain devices available in writing or printing. In particular, although he recognized the need to use markers for various purposes, he could not use visual devices such as superscript and subscript symbols. Thus, in the present work markers are printed in bold face italic, and Sanskrit items to which these are appended appear in simple italic type. It is obviously impossible to distinguish elements in such a manner when a text is transmitted orally. Instead, markers --- which Pānini calls *it* and Pāṇinīyas also call

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anubandha --- are recited as parts of linguistic units. A group of saṁjñāsūtras specifies what parts of items have the class name *it*, that is, what segments are markers:

A 1.3.2: **उपदेशेऽजनुनासिक इत्।** (*upadeśe'j anunāsika it*)

A 1.3.3: **हलन्त्यम्।** (*hal antyam*)

A 1.3.4: **न विभक्तौ तुस्माः।** (*na vibhaktau tusmāḥ*)

A 1.3.5: **आदिर्ञिटुडवः।** (*ādir ñiṭuḍavaḥ*)

A 1.3.6: **षः प्रत्ययस्य।** (*ṣaḥ pratyayasya*)

A 1.3.7: **चुटू।** (*cuṭū*)

A 1.3.8: **लशक्वतद्धिते।** (*laśakv ataddhite*)

These sūtras concern items at a stage before they have been subjected to contextually conditioned operations (*upadeśe* 'in teaching'). Six of the sūtras provide that particular segments which are parts of items at this stage are called *it*, as follows: A 1.3.2: a nasalized (*anunāsikaḥ*: A 1.1.8 [39]) vowel (*ac*); A 1.3.3: the final (*antyam*) segment *l* of *hal* in the akṣara-samāmnāya (Section 1.2, figure C); a final consonant (*hal*); A 1.3.5: initial (*ādiḥ*) *ñi, ṭu, ḍu* (*ñiṭuḍavaḥ*); A 1.3.6: *ṣ* that is the initial (*ādiḥ*) of an affix (*pratyayasya*: A 3.1.1 [15]); A 1.3.7: affix-initial palatal and retroflex stops (*cuṭū*); A 1.3.8: affix-initial *l, ś,* and velar stops (*laśaku*), except in a taddhita (*ataddhite*: A 4.1.76 [70]).

By A 1.3.3, any final consonant would be classed as a marker, but this has to be disallowed in particular instances: A 1.3.4 provides that dental stops, an *s*, and *m* (*tusmāḥ*) in a vibhakti (*vibhaktau*: A 1.4.104, 5.3.1 [65, 67, 71]) are not (*na*) called *it*. See 81.

81 Although sounds classed as markers are indeed recited as parts of items when such linguistic units are first introduced, the elements actually used in the language described lack any

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such markers. Accordingly, in

A 1.3.9: तस्य लोपः। (*tasya lopaḥ*)

Pāṇini provides that a segment to which the class name *it* has been given in a preceding sūtra (*tasya* '[in place] of that') is unconditionally replaced by zero (*lopaḥ*: A 1.1.60 [79]). Thus, the markers of ***ñidhṛṣā, ṭuvépṛ, ḍupacāṣ, ṣac, jas, ṭā, lyap, śas, kta, ktavatu*** are unconditionally dropped, leaving *dhṛṣ* 'dare', *vep* 'tremble, shake', *pac* 'cook, bake', and the affixes *a, as, ā, ya, as, ta, tavat*. The final consonants of vibhaktis such as *āt* (abl.sg.), *tas, am* (see 65, 67) are not classed as *it*, so that they are not deleted.

82 Markers are used for several purposes. Some serve to show that items belong to certain classes. For example, affixes such as ***śap*** and ***śyan*** are marked with *ś* to show that they belong to the sārvadhātuka class (A 3.4.113 [63]). More generally, markers serve to show that items are connected with particular operations, including the assignment of elements to classes. For example, before an affix marked with *ñ* or *ṇ* the final vowel of a stem is replaced by a vṛddhi vowel (A 7..2.115 [417]); *-i* and *-u* of ghi bases are replaced by *-e* and *-o* before endings that are marked with *ṅi* (A 7.3.111, cf. 57); feminine stems in final *i-* and *u-* vowels are optionally assigned to the nadī class if they occur before endings marked with *ṅi* (A 1.4.6 [56]).

A marker may also be attached to an element in order to allow referring to a series of items by means of what they have in common (*sāmānyagrahaṇārtham*). For example, there are three feminine affixes *ī*: ***ṅīn, ṅīp, ṅīṣ***. The marker *ṅi* is attached to all of these in order to allow referring to them by means of the cover term *ṅī* (A 4.1.1 [105]). In some instances, a marker is appended to an item so that such a common term of reference not be eliminated (*sāmānyagrahaṇāvighātārtham*). Consider again the three feminine affixes given above. The first has the final marker *ṇ* to show that the first vowel of a

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base that takes this affix is high-pitched (A 6.1.197 [600]). The second affix is marked with *ṅ* to show that it is low-pitched (A 3.1.4 [592]). The marker *ṣ* of *ṅiṣ* serves no such purpose. However, if this affix were given simply as *ṅi*, the term *ṅī* would be understood to refer to this item alone and not also to *ṅiṅ* and *ṅiṅ*. Marking *ṅiṣ* with *ṣ* preserves the common term of reference *ṅī*, used to designate all three affixes.

In addition, a marker may be appended to an element to distinguish it from a homophonous element (*viśeṣaṇārtham*). For example, there are four nominal endings *as*: *jas* (nom. pl.), *śas* (acc. pl.), *ṅasi* (abl. sg.), *ṅas* (gen. sg.). The last two are marked with *ṅ* for reasons given above. It is also necessary to distinguish ablative and genitive *as*. After a stem in *-a*, the ablative ending is replaced by *āt* (A 7.1.12 [492]) or, if the stem is pronominal, by *smāt* (A 7.1.15), but the genitive ending is replaced by *sya* after any presuffixal base in *-a* (A 7.1.12). In order to allow referring to these endings separately, then, *ṅ* is attached to *ṅasi* as a distinguishing marker. Similarly, nominative and accusative *as* must be distinguished. Only *jas* is replaced by *śī* (A 7.1.17 [492]), and only *śas* has its *-s* replaced by *-n* (A 6.1.103 [532]). The markers *j* and *ś* serve to distinguish these endings.

83 Markers also serve to form abbreviations that refer to members of ordered groups. The first (*ādiḥ*) component of such an abbreviation is an item **i** of a group. This occurs with (*saha*) a marker (*itā*) that is the final (*antyena*) sound of an item or of a subgroup in the akṣarasamāmnāya (Section 1.2, figure C). According to

A 1.1.71: **आदिरन्त्येन सहेता।** (*ādir antyena sahetā*)

an abbreviatory term **iM** thus formed denotes the item **i** and all items that follow, up to the marker **M**. For example, *ti* (*tip*) together with the marker *ṅ* of *mahiṅ* (see 64 with figure A) forms the abbreviation *tiṅ*, which refers to verb endings (A 1.4.14, 3.4.113, 1.4.101 [49, 63, 64]); *taṅ*, composed of *ta* and the

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ṅi of *mahiṅ*, refers to a subgroup of verb endings, called *ātmanepada* (A 1.4.100 [64]); *sup*, formed with the ending *su* and the marker *p* of *sup* (see 67 with figure B), denotes nominal endings (A 1.4.14, 103 [49, 67]); *suṭ* refers to the endings *su au jas am auṭ* (A 1.1.43 [69]). Similarly, abbreviations called *pratyāhāra* by Pāṇinīyas are formed with sounds and markers of Pāṇini's akṣarasamāmnāya. For example, *al* denotes all the sounds listed, and *ac, hal* respectively refer to the vowels and consonants given in this catalog. Pāṇini uses forty-one such abbreviations (see 129).

84 Pāṇini also lets individual sounds serve as class names. According to

A 1.1.69: अणुदित्सवर्णस्य चाप्रत्ययः। (*aṇ udit savarṇasya cāpratyayaḥ*)

a vowel or semivowel listed in the akṣarasamāmnāya (*aṇ*) or a sound with the marker *u* (*udit*) denotes not merely itself (A 1.1.68 [29]) but also (*ca*) any sound homogeneous with it (*savarṇasya* [*saṁjñā*]: A 1.1.9 [33]), provided the sound in question is not an affix (*apratyayaḥ*: A 3.1.1 [15]). Thus, by A 1.1.71 (83), the abbreviation *ac* denotes in the first instance *a i u ṛ ḷ e o ai au* of Pāṇini's akṣarasamāmnāya, and by A 1.1.69 each of these vowels denotes a set of sounds --- eighteen *a*-vowels and so on --- so that *ac* indirectly refers to all vowels. Pāṇini uses *ku cu ṭu tu pu* to refer to sets of stops (see A 1.3.7-8 [80], cf. 33, 43).

85 According to A 1.1.68 (29), an item that is not a technical term of grammar refers to itself. The vowels listed in Pāṇini's sound catalog are class names by A 1.1.69 (84), so that they are not self-referring. On the other hand, *ā ī ū ṝ* are not listed in the akṣarasamāmnāya, so that they are not class names by A 1.1.69. Yet it is necessary to refer to sets of *ā*-vowels, *ṝ*-vowels, and so on. For example, A 1.1.1 (9) should provide that any *ā*-vowel, regardless of its pitch properties, is called *vṛddhi*, and A 1.1.11 (76) should let the class name

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pragṛhya apply to dual endings that terminate in any *ī*- or *ū*-vowel. It is also necessary to refer to sets of short *a*-vowels, *i*-vowels, and so on. For example, *ina, āt,* and *sya* should replace *ṭā, ṅasi,* and *ṅas* only after stems in *-a* (A 7.1.12 [492]). The general terms *hrasva, dīrgha* (A 1.2.27 [35]) are not sufficient. In order to refer to such sets of short and long vowels, then, Pāṇini uses special terms of the type **Vt**, in which a given vowel, short or long, is followed by *t*. According to

A 1.1.70: **तपरस्तत्कालस्य।** (*taparas tatkālasya*)

a vowel **V** followed by **t** (*taparaḥ*) is a name for any vowel with the duration of **V** (*tatkālasya*).

Remarks.

86 1. Vowel markers were originally nasalized (A 1.3.2 [80]), but this pronunciation was given up, and Pāṇini's work as handed down is recited without the nasalization characteristic of these elements. The Kāśikā on A 1.3.2 (I.51: **प्रतिज्ञानुनासिक्याः पाणिनीयाः।**, cf. VPP 121 [p. 42]) notes that Pāṇinīyas recognize the nasality of vowel markers by convention (*pratijñānunāsikyāḥ*). That is, one accepts that a given vowel was originally nasalized as a marker according to what authoritative teachers have said earlier. See also 116. It is also worth emphasizing that the use of markers without doubt predates Pāṇini. In this connection, note that, although Pāṇini lists the endings *auṭ* and *ṭā,* with a marker *ṭ* (A 4.1.2 [241], see also 67 and figure B), among his basic nominal endings, he also knows of and refers to *au* and *ā* marked with *ṅ* (*auṅ, āṅ* : A 7.1.18, 7.3.105, 120 [493, 483, 497]). As commentators have noted, this is best understood to reflect earlier traditions.

87 2. The vowel of a term such as *ku* (A 1.1.69 [84]) is a

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marker, but the vowel of a term such as *ta* in *taparaḥ* (A 1.1.70 [85]) is not. A term of the type **Ca**, in which *a* follows a consonant, is conventionally used to refer to a consonant (cf. TPr. 1.21: अकारोव्यञ्जनानाम् [*akāro vyañjanānām*]), so that *ta* refers to *t*. Pāṇini also uses terms of the type **Ci** to refer to consonants (e.g., *ti*: A 3.4.107 [401]).

88 3. As I pointed out earlier (see 82), *ṅī* is a cover term used to refer to several feminine affixes *ī*. Similarly, *āp* is a cover term that refers to feminine affixes *ā* marked with *p*: *cāp*, *ṭāp*, and *ḍāp*. Pāṇini also uses another kind of cover term, connected with substitutions. Thus, the segments *yu*, *vu* of affixes such as *lyu*, *lyuṭ*, *ṇvul*, *vuñ* are replaced respectively by *ana*, *aka* when they follow stems (A 7.1.1 [509]). Similarly, affix-initial *ph*, *dh*, *kh*, *ch*, *gh* respectively are replaced by *āyan*, *ey*, *īn*, *īy*, *iy* (A 7.1.2).

1.1.2.2. Metarules.

89 The Aṣṭādhyāyī contains metarules (*paribhāṣā*), sūtras that serve to interpret other rules in this text. Some paribhāṣās come into play to interpret case forms in contexts such that a Sanskrit speaker could not be expected to arrive at a single interpretation solely on the basis of his native command of the language. Metarules then specify what one is to understand. There is also a metarule that serves to relate in a particular order items referred to in sūtras. Other paribhāṣās specify that certain elements out of a group of possible replacements substitute for particular items or that certain substituends are alone subject to particular replacements. Still other metarules provide for extending to certain elements operations and properties which would otherwise not pertain to them.

90 A genitive can be used in Sanskrit to designate a relation that holds between the meanings of two nominals (A 2.3.50

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[251]). What particular relation is involved can be known from context, from the meanings of the nominals used. For example, *yasya* 'of which' in A 1.1.73 (61) obviously refers to an item part of which is a vṛddhi vowel, so that the relation involved here is that of part and whole (*avayavāvayavibhāvasambandha*). On the other hand, the context in A 1.1.45 (38) does not suffice to show what relation holds between the referents of the genitive *yaṇaḥ* and the nominative *ik* A metarule serves to interpret such ambiguous genitives. By

A 1.1.49: **षष्ठी स्थानेयोगा।** (*ṣaṣṭhī sthāneyogā*)

a genitive (*ṣaṣṭhī* 'sixth-triplet ending' [67]) not susceptible of a single interpretation in its context is understood to designate one relation (*yoga*) in particular: 'in place of' (*sthāneyogā*). That is, instead of using *sthāne* 'in place' repeatedly with genitive forms in substitution rules, Pāṇini lets this metarule come into play, so that one understands the particular relation in question and can, in effect, supply *sthāne* in construction with a genitive. Thus, the genitive singular *yaṇaḥ* of A 1.1.45 refers to semivowels *y v r l* (*yaṇ*: A 1.1.71 [83]) that are replaced by *i u ṛ ḷ*.

Similarly,

A 1.1.66: **तस्मिन्निति निर्दिष्टे पूर्वस्य।** (*tasminniti nirdiṣṭe pūrvasya*)

A 1.1.67: **तस्मादित्युत्तरस्य।** (*tasmād ity uttarasya*)

serve to interpret locative and ablative forms in contexts where a Sanskrit speaker could not otherwise interpret such terms unambiguously. According to A 1.1.66, the referent of a term **X-loc.** (*tasminniti nirdiṣṭe*) is understood to be a right context such that something applies to what precedes (*pūrvasya* [*kāryam*]). By A 1.1.67, the referent of a term **X-abl.** (*tasmād iti* [*nirdiṣṭe*]) is understood to be a left context: something applies to what follows (*uttarasya* [*kāryam*]). That is, instead of repeatedly stating *pūrvasya* and *uttarasya*

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in sūtras which provide for something to apply to given elements when something follows or precedes, Pāṇini lets these metarules come into play. What applies (*kāryam* 'what is to be done') can be an operation such as augmenting, replacement, or doubling. It can also be the assignment of a class name to given elements. For example, *siti* (loc.sg.) and *svādiṣu* (loc.pl.) in A 1.4.16-17 (75) denote affixes such that elements which precede them have the class name *pada*

None of these metarules concerns a usage unknown from ordinary Sanskrit, where relational genitive forms occur, locative forms are used to signify loci (A 2.3.36 [240]), and ablative forms are construed with direction words (A 2.3.29 [250]). The metarules merely specify that one of different possible interpretations is to be adopted.

91 Another metarule,

A 1.3.10: **यथासङ्ख्यमनुदेशः समानाम्** (*yathāsaṅkhyam anudeśaḥ samānām*)

concerns sūtras in which terms are used that refer to groups with the same number of elements (*samānām*): One understands the subsequently mentioned elements to be related in order (*yathāsaṅkhyam anudeśaḥ*) to those mentioned before. For example, consider again A 1.1.45 (38, 90). The terms *ik* and *yaṇ* denote in the first instance the vowels *i u ṛ ḷ* and the semivowels *y v r l*. In accordance with A 1.3.10, these are related in order, so that the class name *samprasāraṇa* is assigned to *i u ṛ ḷ* which substitute for *y v r l*, respectively.

92 Instead of specifying in each instance that a particular element replaces a given substituend, Pāṇini allows his substitution rules to permit various replacements for a single substituend. A metarule governs what particular substitute is then selected. For example, A 7.4.62: **कुहोश्चुः** (383) provides that palatal stops (*cuḥ*: A 1.1.69 [84]) substitute for velar stops and *h* (*kuhoḥ* [*sthāne*]: A 1.1.49 [90]) in an abhyāsa syllable (A 6.1.4 [52]). The terms *kuhoḥ* (gen. du.) and *cuḥ*

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denote different numbers of elements: *k kh g gh ṅ h* and *c ch j jh ñ*. Hence, A 1.3.10 (91) cannot serve to relate in order the substituends and replacements. Nor will it do to reword a sūtra like A 7.4.62 to specify that particular sounds replace given sounds, for example, that *jh* replaces *gh* and *h*, since this would fail to focus on the generalization that palatal substitution takes effect. The proper replacements are assured by a metarule:

A 1.1.50: स्थानेऽन्तरतमः। (*sthāne'ntaratamaḥ*)

provides that, if there is a choice of replacements to occur in place (*sthāne*) of a substituend, that one occurs which is most similar (*antaratamaḥ*) to the substituend. Thereby, voiceless unaspirated *c* replaces voiceless unaspirated *k*, voiceless aspirated *ch* replaces voiceless aspirated *kh*, voiced unaspirated *j* substitutes for voiced unaspirated *g*, voiced aspirated *jh* substitutes for voiced aspirated *gh*, and *jh* also replaces *h*, which is voiced and an aspirate.

93 By the same token, the guṇa vowel (A 1.1.2 [9]) *a* and the vṛddhi vowel *ā* are selected to replace short or long *ṛ*-vowels if substitutes are not specified. In addition, some sūtras provide that *i, u* replace *ṛ*. In all such cases, a vowel *a ā i ī u ū* (*aṇ*: A 1.1.71, 69 [83, 84]) that occurs in place of a *ṛ*-vowel (*uḥ*: A 1.1.49 [90]) is automatically followed by *r* (*raparaḥ*), as provided for in

A 1.1.51: उरण् रपरः। (*uraṇ raparaḥ*)

94 There are also rules that let a short vowel (*hrasva*: A 1.2.27 [35]) replace another vowel. If the vowels subject to replacement are then *e o ai au* (*ecaḥ*: A 1.1.71, 69, 49 [83, 84, 90]) and the substitution rules in question do not specify the vowels that replace these, the metarule

A 1.1.48: एच इग्घ्रस्वादेशे। (*eca ig ghrasvādeśe*)

comes into play: *i* and *u* (*ik*) alone substitute for *e o ai au* if a short vowel is said to replace one of these sounds (*ecaḥ* ...

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hrasvādeśe). For example, the *-o* of *go* 'cow, bull' in *citrago* is replaced by a short vowel (A 1.2.48 [322]); according to A 1.1.48, the substitute for *o* is *u*: *citrago* › *citragu* 'someone who has spotted cows'.

95 Other metarules serve to specify substituends. As I noted in 22, sounds or larger units are subject to replacement. In general, if a substituend genitive (A 1.1.49 [90]) refers to a grammatical unit, either the last (*antyasya*) or the first (*ādeḥ*) sound (*alaḥ*) of the unit is replaced. If an item is subject to substitution when it follows (*parasya*) another, then its first sound is replaced; otherwise, the last sound of a unit is replaced:

A 1.1.52: अलोऽन्त्यस्य। (*alo'ntyasya*)

A 1.1.54: आदेः परस्य। (*ādeḥ parasya*)

Some elements replace whole units. According to

A 1.1.55: अनेकाल्शित्सर्वस्य। (*anekāl śit sarvasya*)

a substitute that consists of more than one sound (*anekāl*) replaces the whole unit (*sarvasya*) denoted by a substituend genitive, as does an element that consists of one sound and is marked with *ś* (*śit*). On the other hand, there are replacements that consist of more than one sound yet substitute only for the final sounds of particular units. Such replacements are marked with *ñ*:

A 1.1.53: ङिच्च। (*ñic ca*)

provides that a substitute with this marker (*ñit*) also (*ca*) occurs in place of the last sound of a unit denoted by a substituend genitive.

For example, A 7.1.84 (471) states a replacement for the presuffixal base *div-* 'heaven' when this is followed by the ending *su*: the stem undergoes substitution by *au* (*aut*). In accordance with A 1.1.52, *au* replaces the *-v* of *div-*: *div-s* (nom. sg.) › *diau-s* › *dyaus* (A 6.1.77 [125]). Together with A 1.1.54, the substitution rule A 7.2.83 (440) provides that *I*

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replaces the initial sound *ā-* of *āna* after *ās* 'be seated': *ās-āna* > *āsīna* 'seated'. In accordance with A 1.1.55, *āt* replaces all of *ñasi* (A 7.1.12 [492]) and *śi* replaces all of *jas* (A 7.1.20 [493]): *vṛkṣa-as* > *vṛkṣa-āt* > *vṛkṣāt* (abl. sg.) 'tree', *vana-as* > *vana-i* ... > *vanāni* (see 69). However, *iyaṅ* and *uvaṅ* are marked with *ṅ*, so that, by A 1.1.53, they replace only the final sounds *-i -ī* and *-u -ū* of stems (A 6.4.77 [452]): *kṣi-a-ti* > *kṣiyati* (3sg. pres. ind.) 'dwells', *āp-nu-anti* > *āpnuvanti* (3pl. pres. ind.) 'reach, obtain', *bhrū-au* > *bhruvau* (nom.-acc. du.) 'brows'.

96 Vowels generally replace other vowels. Hence, in conjunction with A 1.2.27 (35), Pāṇini provides, by

A 1.2.28: **अचश्च।** (*acaś ca*)

that if the terms *hrasva, dīrgha, pluta* are used to refer to substitutes, the vowels in question replace only other vowels (*acaḥ* [gen. sg.]: A 1.1.49 [90]). For example, according to A 1.2.47 (459), short-vowel substitution applies to a neuter nominal base. The term *hrasvaḥ* is used in this rule to refer to replacements, so that the operation applies only to a final (A 1.1.52 [95]) vowel, not also to a final consonant of a neuter base; e.g., *upago* > *upagu* 'near the cow'. If *hrasva, dīrgha,* or *pluta* is not used to denote a substitute, however, a vowel can indeed replace a consonant; for example, *au* substitutes for the *-v* of *div-* (see 95).

97 Guṇa and vṛddhi vowels (A 1.1.1-2 [9]) commonly, though not exclusively, substitute for short or long *i-*, *u-*, *ṛ-*, or *ḷ-* vowels. In substitution rules, Pāṇini does not repeatedly give the substituends which guṇa and vṛddhi vowels usually replace. Instead, in

A 1.1.3: **इको गुणवृद्धी।** (*iko guṇavṛddhī*)

he provides that if *guṇa vṛddhi* (*guṇavṛddhī* [nom. du.]) are used to denote substitutes in sūtras where substituends are not otherwise specified, replacement applies only to the vowels signified by *ik* (*ikaḥ*: A 1.1.71, 69, 49 [83, 84, 90]).

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For example, A 7.3.84 (127) states that guṇa substitution applies to a stem before a sārvadhātuka or an ārdhadhātuka affix (A 3.4.113-117 [63]). By virtue of the restriction established in A 1.1.3, this operation applies to the final sounds (A 1.1.52 [95]) of presuffixal bases that end in (A 1.1.72 [30]) *i ī u ū ṛ ṝ ḷ*; e.g., *cayana* 'picking, gathering, heaping' (< *ce-ana* < *ci-ana*), *nayati* 'leads, guides' (< *ne-a-ti* < *nī-a-ti*), *stoṭṛ* 'one who praises' (< *stu-ṭṛ*), *bhavati* 'is, becomes' (< *bho-a-ti* < *bhū-a-ti*), *karaṇa* 'doing, making, means of doing or making' (< *kar-ana* < *kṛ-ana*: A 1.1.51 [93]), *taraṇa* 'crossing' (< *tar-ana* < *tṝ-ana*). By virtue of the same restriction, vṛddhi substitution according to A 7.2.1 (412) applies to the same final vowels of stems before the affix *sic* followed by parasmaipada endings; e.g., *acaiṣīt* (3sg. aor. act.) '(has) picked, gathered, heaped', *anaiṣīt* '(has) led, guided', *alāvīt* '(has) cut', *akārṣīt* 'did, (has) done, made', aorist forms of *ci, nī, lū,* and *kṛ*.

Since A 1.1.3 comes into play only if substituends which guṇa and vṛddhi vowels replace are not explicitly given and only if the terms *guṇa, vṛddhi* are used, this metarule does not apply with respect to sūtras such as A 7.1.84 (see 95): the vṛddhi vowel *au* substitutes for the final consonant of *div-*.

98 The following sūtras are related to A 1.1.3 (97):

A 1.1.4: **न धातुलोप आर्धधातुके।** (*na dhātulopa ārdhadhātuke*)

A 1.1.5: **क्ङिति च।** (*kṅiti ca*)

If the right context (A 1.1.66 [90]) in which guṇa and vṛddhi vowels would replace *i ī u ū ṛ ṝ ḷ* in accordance with A 1.1.3 is an ārdhadhātuka affix (A 3.4.114-116 [63]) before which a verb undergoes deletion (*dhātulope*: A 1.3.1, 3.1.32, 1.1.60 [47, 79]), then replacement by guṇa and vṛddhi does not (*na*) apply. This is also (*ca*) the case if an affix before which the replacement would apply in accordance with A 1.1.3 is marked with *ṅ, k,* or *ṅ* (*kṅiti*). For example, the affix *yaṅ* included in the derived verb *lolūya* 'cut intensely, repeatedly' (A 3.1.22 [280]) is

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deleted before the agentive affix *ac* (A 2.4.74 [286]): *lolū-a*. Although an ārdhadhātuka affix generally conditions guṇa substitution for a preceding stem, in the case of *lolū-a* this is disallowed, since the suffix conditions deletion in the preceding verb: *lolū-a* > *loluva* (A 6.4.77 [452]) 'one who cuts intensely, repeatedly'. The affix *kta* is marked with *k* to show that it does not condition guṇa replacement: *cita, nīta, stuta, bhūta, kṛta,* past participles of *ci, nī, stu, bhū, kṛ* (A 3.4.70, 3.2.102 [248, 294]).

99 Other paribhāṣās are extension rules (*atideśasūtra*) that extend to elements operations and properties which would otherwise not pertain to them. Consider the forms *aikṣata* (3sg. impfct. mid.) 'looked, saw', *ait* (3sg. impfct. act.) 'went', *vṛkṣābhyām* (instr.-dat.-abl. du.) 'trees', *ābhyām* 'them'. The initial augment *āṭ* (A 1.1.46 [17]) is added to the stem *Ikṣ-a-* of *Ikṣ-a-ta* by a rule (A 6.4.72 [238]) which provides that a presuffixal base beginning with a vowel takes this augment if certain endings follow. The final vowel of *vṛkṣa-* in *vṛkṣa-bhyām* is replaced by *ā* according to a sūtra (A 7.3.102 [482]) which provides that a long vowel replaces the final sound of a stem in *-a* before certain endings. For an item to be characterized as beginning with a vowel or ending in short *a*, it should have at least two sounds: an initial vowel and at least one sound following it, a final *a* and at least one sound before this. Thereby, the *i-* of *i-t* is not properly a vowel-initial stem, and the *a-* of *a-bhyām* is not a stem ending in *a*. Yet operations which apply to derive *aikṣata, vṛkṣābhyām* should apply also in deriving *ait* (< *āi-t*) and *ābhyām* (< *a-bhyām*). In order to allow such operations to take effect in these and other comparable instances, Pāṇini provides, by

A 1.1.21: आद्यन्तवदेकस्मिन् (*ādyantavad ekasmin*)

that an operation takes effect with respect to a single sound (*ekasmin*) as it would with respect to an initial or final sound (*ādyantavat*) of a larger unit. That is, an operation said to

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apply to an item that begins or ends with a given sound is allowed to apply to an element consisting of that sound alone. Thereby, the stem *i-* of *i-t* receives the initial augment *āṭ*, and the *a-* of *a-bhyām* is replaced by a long vowel.

100 A series of paribhāṣās concerns the relative status of elements subject to replacement and their replacements. A substituend (*sthānin*) X and its replacement (*ādeśa*) Y are distinct elements, so that, if one wishes Y to have the status of X, one must explicitly provide for this to be the case. According to

A 1.1.56: स्थानिवदादेशोऽनल्विधौ (*sthānivad ādeśo'nalvidhau*)

a substitute (*ādeśaḥ*) has the status of its substituend (*sthānivat* '[behaves, is treated] in the same manner as a substituend') except in respect of an operation that depends on an original sound (*analvidhau*). Thereby, if an item belongs to a certain class, its replacement also belongs to that class and is referred to by the appropriate class name or abbreviation. Similarly, if an element has a particular marker, its replacement is also characterized by that marker. Consequently, operations associated with elements pertain also to their replacements. For example, *ya* and *ām* replace the nominal endings *ṅe, ṅi* (A 7.1.13, 7.3.116 [492, 497]). As the replacement of stem-final *-a* takes effect before a basic ending like *bhyām* (*vṛkṣābhyām* < *vṛkṣa-bhyām*, see 99), so does it apply also before an item that substitutes for a basic ending, such as *ya* which occurs in place of *ṅe*: *vṛkṣa-ya* > *vṛkṣāya* (see 46). A nominal ending marked with *ṅ* receives the initial augment *yāṭ* if it follows a stem with a feminine suffix *āp*: *ajā-e* > *ajā-yāe* (> *ajāyai*, see 46). The substitute *ām* is characterized by the marker *ṅ* of the basic ending *ṅi* which it replaces, so that it too receives the augment *yāṭ*: *ajāyām* (< *ajā-yāām* < *ajā-ām* < *ajā-i*).

On the other hand, if the element replaced is merely a

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particular sound, its replacement does not have the status of the original with respect to an operation that depends for its application on the occurrence of that sound. For example, the *-v* of *div-* is replaced by *-au* before *su* (see 95). There is also a rule (A 6.1.68 [404]) according to which the nominative ending *s* (*su*) is dropped after a consonant; e.g., *gomān* (< ... *goṃat-s*, see 79). If the sound *au* which replaces *-v* had the status of its substituend with respect to this operation, the ending *su* would be dropped after the *-au* of *diau-*, so that one would derive an unacceptable form **dyau* instead of the required *dyaus*. This is avoided, since A 1.1.56 not only provides that a replacment has the status of the element for which it substitutes but also makes an exception to this general provision.

101 In particular instances, nevertheless, replacements for single sounds have to be given the status of their substituends.

A 1.1.57: **अचः परस्मिन्पूर्वविधौ॥** (*acaḥ parasmin pūrvavidhau*)

provides that if a vowel undergoes substitution in a right context (*parasmin* 'before a following element': A 1.1.66 [90]), the replacement for that vowel (*acaḥ* [*ādeśaḥ*]) has the status of the original sound in respect of an operation relative to an element that precedes (*pūrvavidhau*) this original sound prior to substitution. For example, the *-a* of *katha* 'tell, relate' is deleted before the affix *ṇic* (A 6.4.48 [450]): *katha-i* > *kath-i*. A penultimate *a* of a presuffixal base that occurs before an affix marked with *ñ* or *ṇ* is subject to replacement by the vṛddhi vowel *ā* (A 7.2.116 [417]); e.g., *pac-i* > *pāc-i* 'cause ... to cook; have ... cook' (3sg. pres. ind. act. *pācayati*). Were this operation to apply in *kath-i*, one would have **kāth-i* (**kāthayati*) instead of the required *kath-i* (*kathayati*). By A 1.1.57, the zero replacement for the *-a* of *katha* has the status of its substituend with respect to an operation concerning *kath-*, which is thereby treated as though it were still *katha-*

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Consequently, the *a* of *kath-* is not treated as penultimate sound, so that it is not subject to replacement by the vṛddhi vowel *ā*.

In addition, according to

A 1.1.59: द्विर्वचनेऽचि (*dvirvacane'ci*)

if a vowel undergoes substitution in the right context of another vowel (*aci*), before which doubling applies (*dvirvacane*) --- that is, before a vowel-initial affix that determines doubling --- the replacement in question has the status of the original vowel in respect of one operation in particular, doubling (*dvirvacane*). For example, the *-ā* of *pā-* 'drink' is dropped before the endings *atus, us,* found in third and second person dual active perfect forms: *pā-atus* > *p-atus, pā-us* > *p-us* (A 6.4.64 [451]). Doubling should apply before these endings (A 6.1.8 [382]), but this operation affects a syllable, an item with a vowel (*ekācaḥ*: A 6.1.1 [24]), and the only vowels in *p-atus* and *p-us* belong to the endings, not to the stems. For purposes of doubling, then, A 1.1.59 lets the zero replacement for *-ā* have the status of this original vowel, so that doubling does take effect and the required forms *papatuḥ, papuḥ* are derived.

102 Consider now the following: *kau staḥ* 'Which two are there?', *daddhy atra* 'There is yogurt here', *yāyāvara* 'one who constantly goes (from place to place)', *cikīrṣaka* 'one who wishes to do, to make', *yuñktas* (3du. pres. indic. act.) 'join, connect, yoke' *piṃṣanti* (3pl. pres. indic. act.) 'grind', *pratidīvnā* (instr. sg.) 'day, gambler', *sagdhi* 'eating together, banquet', *jakṣatuḥ* (3du. pfct. indic. act.) 'ate'.

The *a* of *as* 'be' and of the affix *śnam* is dropped in a presuffixal base before a sārvadhātuka affix marked with *k* or *ṅ* (A 6.4.111 [456]). The endings *tas* and *jhi* (> *anti*: A 7.1.3 [509]) belong to the sārvadhātuka class (A 3.4.113 [63]) and are marked with *ṅ* (A 1.2.4 [513]), so that the *a* of *as* and of *śnam* in *yunaj-* and *pinaṣ-* is deleted when these stems occur

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before these endings. In addition, the *-a* of a stem is dropped before an ārdhadhātuka affix (A 6.4.48 [450]). Since *varac* and *ṇvuḷ* (> *aka*: A 7.1.1 [509]) belong to the ārdhadhātuka class (A 3.4.114 [63]), *-a* in the derived verbs *yāyāya* 'go constantly' and *cikīrṣa* 'wish to do, make' is deleted before them. Further, penultimate vowels in certain verbs, including *ghas* 'eat', are deleted before vowel-initial affixes marked with *k* or *ṅ*, and the vowel of *ghas* is also dropped if the verb occurs before a consonant-initial suffix so marked (A 6.4.98, 100 [454]). Thus, the vowel of *ghas* is elided if the ending *atus* or the affix *ktin* follows this verb. Moreover, penultimate *a* of a bha element (A 1.4.18 [75]) in *-an* is deleted (A 6.4.134 [502]): *pratidivan-ā* > *pratidivn-ā* > *pratidīvnā* (A 8.2.77 [552]). And *i* followed by another vowel in close junction is replaced by *y* (see 20): *dadhi atra* > *dadhy atra* > (optionally) *dadhdhy atra* (A 8.4.47 [576]) > *daddhy atra* (A 8.4.53 [577]). The substitution of *y* for *i* and the deletion of *a* in the examples given apply in right contexts. According to A 1.1.57 (101), then, the substitutes in question would have the status of their substituends with respect to operations concerning elements that precede the original vowels. If this were always allowed, however, one would not account for the required results.

Thus, if the term *kau* of *kau stas*, with *stas* derived from *as-tas*, were treated as followed by a vowel, its *-au* would be subject to replacement by *-āv* (A 6.1.78 [524]), and if the *-y* of *dadhy* had the status of *-i*, the preceding sound *dh* would not be eligible for doubling, which does not apply before vowels. Were the zero replacment for the *-a* of *yāyāya* to have the status of its substituend according to A 1.1.57, the *-y* of *yāyāy-vara* (< *yāyāya-vara*) could not be dropped (A 6.1.66 [522]) to give *yāyāvara*, since the deletion applies only if *y* is followed by a consonant. The suffix *ṇvuḷ* is marked with *ḷ* to show that the first vowel which precedes this element in a derivate is high-pitched (A 6.1.193 [600]): *cikīrṣaka*. If the zero replacment for the *-a* of *cikīrṣa* had the status of the

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original vowel according to A 1.1.57, the *ī* of *cikīrṣ-* could not be treated as the first vowel preceding the affix. Word-interior *n* is replaced by the nasal segment *ṁ*, called *anusvāra*, before consonants other than semivowels and nasals (A 8.3.24 [559]). Before consonants other than spirants, *ṁ* is then replaced by a sound homogeneous with the following segment (A 8.4.58 [580]): *yunaj-tas* > *yunj-tas* > *yung-tas* (A 8.2.30 [544]) > *yuṁg-tas* > *yuṁktas* > *yuṅktas*, *pinaṣ-* > *piṇṣ-* > *piṁṣ-*. If the zero that replaces the *a* of *śnam* in *yunaj-* and *pinaṣ-* had the status of the original vowel in accordance with A 1.1.57, the operations that should apply to derive *yuṇktas* and *piṁṣanti* could not take effect, since they require that consonants follow *n* or *ṁ*. *v* is deleted before consonants other than *y* (A 6.1.66), so that the zero substitute for the second *a* of *pratidivan-* in *pratidivan-ā* should indeed have the status of the original vowel, by A 1.1.57; otherwise, the *-v-* of *pratidivn-ā* would be subject to deletion. On the other hand, in order that the *i* of *-divn-* be replaced by *ī*, the *v* of *div* must be followed by a consonant (A 8.2.77), so that the zero substitute for the penultimate *-a-* of *pratidivan-* should not have the status of its substituend with respect to this operation. As shown, the *a* of *ghas* is deleted before *atus* and *ktin*. At a stage in the derivation of *gdhi*, one has *ghdhi* (< *gh-ti* < *ghs-ti*), and *g* should replace *gh*. The substitution of a voiced unaspirated stop for an aspirate applies before consonants (A 8.4.53), so that, if the zero replacement for the vowel of *ghas* were given the status of its substituend, in accordance with A 1.1.57, the required operation could not apply to *ghdhi*, where *gh* would now be treated as preceding a vowel. By the same token, *gh* in *jhaghṣ-atus* (< *jhaghs-atus* < ... *ghas-atus*) would not be subject to replacement by *k* (*jhaghṣ-atus* > *jaghṣ-atus* (A 8.4.54 [577]) > *jakṣatus* (A 8.4.55 [578]), since this operation requires that *gh* precede a voiceless consonant.

Obviously, A 1.1.57 cannot be left unrestricted. Therefore,

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in

A 1.1.58: न पदान्तद्विर्वचनवरेयलोपस्वरसवर्णानुस्वार-दीर्घजश्चर्विधिषु। (*na padāntadvirvacanavareya-lopasvarasavarṇānusvāradirghajaścarvidhiṣu*)

Pāṇini provides that, contrary to A 1.1.57, the replacement for a vowel which undergoes substitution in a right context does not (*na*) have the status of its substituend with respect to particular provisions (*-vidhiṣu*) concerning elements that precede the original vowel: The provision of a pada-final element (*padānta*: A 1.4.14 [49]), as in the case of *kau stas* (< *kim-au as-tas*); doubling (*dvirvacana*): *dadhy* > *dadhdhy*; replacing *y* with zero (*yalopa*: A 1.1.60 [79]) before *vara* (*vareyalopa*): *yāyāy-vara* > *yāyāvara*; an operation concerning an accent (*svara*): *cikīrṣaka*; an operation whereby a sound homogeneous with another (*savarṇa*: A 1.1.9-10 [33-34]) replaces a segment: *yuṅk-* > *yuṅk-*; an operation that results in *ṁ* (*anusvāra*): *piṇṣ-* > *piṁṣ-*; one that results in a long vowel (*dīrgha*: A 1.2.27 [35]): *pratidivn-ā* > *pratidīvnā*; one whereby a voiced unaspirated non-nasal stop (*jaś*) replaces another sound: *ghdhi* > *gdhi*; and an operation whereby a voiceless unaspirated stop or a voiceless spirant (*car*) substitutes for another sound: *jagḥṣ-atus* > *jakṣatus*.

103 Two metarules concern what is allowed when an affix is replaced by zero (*pratyayalopa*: A 3.1.1, 1.1.60-61 [15, 79]):

A 1.1.62: प्रत्ययलोपे प्रत्ययलक्षणम्। (*pratyayalope pratyayalakṣaṇam*)

A 1.1.63: न लुमताङ्गस्य। (*na lumatāṅgasya*)

According to A 1.1.62, whatever is conditioned by an affix (*pratyayalakṣaṇam* [*kāryam*]) takes effect even if that affix is deleted (*pratyayalopa*). According to A 1.1.63, however, if the zero replacement for an affix is one denoted by a term with *lu* (*lumatā*: A 1.1.61 [79]), once the affix has been dropped, an operation that would apply to its stem (*aṅgasya*: A 1.4.13 [46])

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in the presence of that affix now does not (*na*) take effect.

For example, even after the ending *su* of *gomat-s* is dropped, the long-vowel substitution and augmenting which this affix conditions for the stem *gomat-* take effect, so that one gets *gomānt* (see 79), and *gomānt* still has the class name *pada* (A 1.4.14 [49]), so that its *-t* is deleted (A 8.2.23 [542]). Similarly, even after the ending *su* is elided after *gomat-*, this remains a pada, so that its *-t* is subject to replacement by *-d* (A 8.2.39 [546]): *gomad* (nom.-acc. sg. nt.). However, the zero replacement for *su* after *gomat-* in the compound *gomat-priya* is a particular zero, designated by *luk* (A 2.4.71 [278]), so that the operations which this ending would condition on the stem *gomat-* do not apply. Similarly, the *-d* of the neuter stem *tad* is not replaced by *-a* after *su* has been dropped, and the vowel of *mṛj-* in *mṛj-tas* is not subject to vṛddhi substitution once the suffix *śap* has been deleted (see [79]).

Remark.

104 I have presented A 1.1.59 (101) in keeping with the interpretation accepted by most Pāṇinīyas, omitting another interpretation, already brought up in the Mahābhāṣya and adopted by Bhaṭṭoji Dīkṣita. In addition, the interpretation I have given for A 1.1.58 (102) differs in a detail from the one Pāṇinīyas adopt. According to them, *vareyalopa* is split (*vare-yalopa*) and understood to provide separately that: if a vowel is replaced before *varac* (*vare*), its substitute does not have the status of the original vowel with respect to an operation on what preceded this vowel; the substitute for a vowel in a right context does not have the status of the original in respect of substituting zero for a *y* (*yalopa*) that precedes the original vowel. Under the interpretation I have given, A 1.1.57 (101) grants the status of the substituend *u* to the *-v-* of *vāyvos* ([gen.-loc. du.] < *vāyu-os*), so that the *y* preceding it is not deleted by virtue of occurring before a

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consonant (A 6.1.66). Under the usual Pāṇinīya interpretation of A 1.1.58, this sūtra denies the status of the original vowel to the *-v-* of *vāyvos,* so that one must provide in another way that the *y* of this and comparable forms is not deleted. Details concerning this are treated in part III.1 of my work.

1.1.2.3. Headings.

105 The Aṣṭādhyāyī is thematically divided into sections by headings (*adhikāra*). Some headings give elements with respect to which operations are stated in subsequent sūtras. Thus, A 3.1.91: **धातोः।** (66) and

A 4.1.1: **ङ्याप्प्रातिपदिकात्।** (*ṅyāpprātipadikāt*)

head two groups of affixation rules. The first heading is in force to the end of the third adhyāya. Rules of this section introduce affixes (A 3.1.1 [15]) that occur with verbs (*dhātu* [abl. sg. *dhātoḥ*]: A 1.3.1, 3.1.32 [47]). The second heading is in force to the end of the fifth adhyāya. Unless it is otherwise specified, rules of this section introduce affixes that occur with nominal bases (*prātipadika*: A 1.2.45-46 [48]) and items with feminine suffixes *ṅī, āp* (*ṅyāpprātipadikāt*, cf. 82, 88).

Sūtras of the section beginning with

A 6.4.1: **अङ्गस्य।** (*aṅgasya*)

state operations connected with stems, presuffixal bases (*aṅga* [gen. sg. *aṅgasya*]: A 1.4.13 [46]). This section extends to the end of the seventh adhyāya.

Another group of sūtras is headed by

A 8.1.16: **पदस्य।** (*padasya*)

Except as otherwise indicated, these rules concern operations connected with padas (*padasya*: A 1.4.14-17 [49, 75]). This section extends to

A 8.3.55: **अपदान्तस्य मूर्धन्यः।** (*apadāntasya*

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mūrdhanyaḥ)

a new heading in force to the end of the third pāda of the eighth adhyāya. Rules of the section beginning with A 8.3.55 give conditions under which a consonant that is not the final sound of a pada (*apadāntasya*) is replaced by a retroflex sound (*mūrdhanyaḥ*, see 43). A 8.3.55 itself states the operation: A retroflex sound occurs in place of (A 1.1.49 [90]) a sound that is not the final of a pada.

106 Other headings also state operations. As was shown earlier, A 6.1.1-2 and 8.1.1 (24-25) provide that particular elements are doubled, under conditions to be given in subsequent sūtras. According to

A 6.1.84: **एकः पूर्वपरयोः।** (*ekaḥ pūrvaparayoḥ*)

one (*ekaḥ*) element occurs in place of both a preceding and a following segment (*pūrvaparayoḥ* [*sthāne*]: A 1.1.49 [90]). Subsequent sūtras give sounds that are to be replaced and specify additional conditions under which two contiguous sounds are replaced by one.

107 A heading may also give conditions under which operations take effect. Thus,

A 4.1.3: **स्त्रियाम्।** (*striyām*)

heads a group of rules that introduce feminine affixes. The affixes (*pratyaya*: A 3.1.1 [15]) in question follow (A 3.1.2) a nominal base (A 4.1.1 [105]) on condition that this is used in the meaning 'feminine' (*striyām*).

A 6.1.72: **संहितायाम्।** (*saṁhitāyām*)

A 6.3.114: **संहितायाम्।**

head different groups of rules stating operations that apply to elements in close junction (*saṁhitāyām*: A 1.4.109 [42]) with others.

A 8.3.57: **इण्कोः।** (*iṇkoḥ*)

gives left contexts (A 1.1.67 [90]) in which sounds to be

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specified in later sūtras are replaced by retroflex sounds (A 8.3.55 [105]): if *i ī u ū ṛ ṝ ḷ e o ai au h y v r l* or velar stops (*iṇkoḥ*: A 1.1.71, 69 [83-84]) precede.

108 Some headings are saṁjñāsūtras that introduce class names which apply to items given in or derived by subsequent rules. A 3.1.1: **प्रत्ययः।** (15) heads a section of rules that introduce elements called *pratyaya;* A 1.4.56: **प्राग्रीश्वरान् निपाताः।** (55) heads a group of sūtras that provide for certain items to be called *nipāta;* A 2.1.3: **प्राक्कडारात्समासः।**(26) heads a section rules of which serve to derive items called *samāsa.*

109 A heading may also be a metarule. Sūtras in the fourth pāda of the first adhyāya and the first two pādas of the second adhyāya are governed by

A 1.4.1: **आ कडारादेका संज्ञा।** (*ā kaḍārād ekā saṁjñā*)

Only one (*ekā*) class name (*saṁjñā*) of those introduced by rules of this section may apply at once to a given entity, except where otherwise provided for. That is, classes with which these sūtras are concerned are generally disjunct.

According to

A 2.1.1: **समर्थः पदविधिः।** (*samarthaḥ padavidhiḥ*)

an operation pertaining to padas (*padavidhiḥ*: A 1.4.14 [49]) applies to padas that are syntactically and semantically related (*samarthaḥ*). All but one of the rules in question of the section, which extends to the end of the second pāda of the second adhyāya, have to do with compounds (*samāsa*: A 2.1.3 [26]), which are derived from semantically and syntactically related padas. See Section 2.4.2.3.

The adhikārasūtra

A 8.2.1: **पूर्वत्रासिद्धम्।** (*pūrvatrāsiddham*)

provides that a rule is suspended (*asiddham* 'not accomplished,

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not established') with respect to what precedes (*pūrvatra*). This heading is in force throughout the final three pādas of the Aṣṭādhyāyī, the group of sūtras Pāṇinīyas call the **tripādī**. Except as otherwise indicated, a sūtra of the tripādī is suspended with respect to a rule of the preceding seven and one-quarter adhyāyas, and within the tripādī itself a sūtra is suspended in relation to an earlier rule. Sūtras of the tripādī are thereby nonexistent with respect to earlier ones. This suspension has two effects. First, once the operation provided for in a rule of the tripādī has taken effect, the element that results from this operation is regularly not subject to an operation stated in an earlier rule. Second, rules of the tripādī regularly apply after rules of the first seven and one-quarter chapters, and an earlier rule of the tripādī takes effect before a later sūtra of this group. See Sections 2.7.2.2 and 3.4.

110 The metarules considered in 109 pertain to specified parts of the grammar. Some paribhāṣās of such limited scope are stated within sections of rules governed by particular headings. Thus,

A 1.4.2: **विप्रतिषेधे परङ्कार्यम्।** (*vipratiṣedhe paraṅ kāryam*)

is valid in respect of sūtras of the section headed by A 1.4.1 (109): If two rules with independent domains of application come into conflict (*vipratiṣedhe*) by possibly applying in one and the same instance, whatever is to be done by a later rule (*paraṅ kāryam*) takes precedence. See Section 3.5.

The group of sūtras that A 3.1.91 (66) heads includes

A 3.1.94: **वासरूपोऽस्त्रियाम्।** (*vāsarūpo'striyām*)

according to which a verbal affix other than one introduced by a rule of the section beginning with A 3.3.94 (114) is allowed to occur optionally (*vā*: A 1.1.44 [31]) with respect to an affix provided by a related rule, on condition that it does not have the same shape (*asarūpaḥ*) as that affix. See 123.

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As I pointed out in 106, A 6.1.84 heads a set of rules that provide for one sound to replace two contiguous segments: *ab* > *c*. According to

A 6.1.85: अन्तादिवच्च। (*antādivac ca*)

the single replacement *c* is then treated as the final segment of the item that ends with *a* and as the initial segement of the item that begins with *b* (*antādivat*). For example, *agni-au* consists of a base that ends in *-i* and an affix said to begin with *au* (see A 1.1.21 [99]). The contiguous vowels *i* and *au* are both replaced by a single long vowel homogeneous with the first one (A 6.1.102 [532]): *agni-au* > *agnī*. The replacement *ī* is treated as the initial sound of an ending. Hence, *ī* can be treated as a dvivacana element that ends in *ī* (A 1.1.21 [99]), so that it belongs to the pragṛhya class (A 1.1.11 [76]).

Another metarule that applies for rules of the group headed by A 6.1.84 is

A 6.1.86: षत्वतुकोरसिद्धः। (*ṣatvatukor asiddhaḥ*)

A rule of this group is suspended (*asiddhaḥ*) with respect to two kinds of rules: those which provide for *ṣ* to replace *s* and those that introduce the final augment *tuk* (*ṣatvatukoḥ*). See 654.

111 Not only is the Aṣṭādhyāyī divided into major sections of rules, these are further subdivided into subsections. For example, the third, fourth, and fifth adhyāyas, headed by A 3.1.1 (15), contain affixation rules. There are two large subsections in this set of rules: A 3.1.91 (66, 105) heads a group of rules that introduce verbal affixes, and A 4.1.1 (105) heads a group of sūtras that generally introduce nominal affixes. Each of these two sets has subgroups.

A 3.1.95(66) heads a group of sūtras introducing verbal affixes called *kṛtya*. Rules of the subsection that begins with

A 3.3.18: भावे। (*bhāve*)

A 3.3.19: अकर्तरि च कारके संज्ञायाम्। (*akartari ca*

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kārake saṁjñāyām)

introduce particular affixes under the following conditions: An act in the abstract is to be signified (*bhāve*); in addition (*ca*), there is to be signified a participant in an act (*kārake*) other than an agent (*akartari*), and the derivate formed by affixation is used to denote not just any such participant but a particular thing or individual (*saṁjñāyām*). For example, *āhāra* denotes the act of taking or a particular thing from which one takes something, namely food, from which one extracts flavor.

Within the section that begins with A 4.1.1, a subgroup of rules, headed by A 4.1.3 (107), concerns feminine affixes. Another subgroup, headed by A 4.1.76 (70), deals with taddhita affixes. Some of these follow nominal bases; in fact, the taddhita set includes some feminine affixes. However, taddhita affixes are mostly introduced to padas (A 1.4.14 [49]). According to

A 4.1.82: समर्थानाम्प्रथमाद्वा। (*samarthānām prathamād vā*)

affixes introduced by subsequent sūtras occur optionally (*vā*: A 1.1.44 [31]), so that derivates formed with these taddhita affixes alternate with other structures, and if related padas are referred to in these rules, the affixes in question follow the first of these related items (*samarthānām prathamāt*). In addition, A 5.3.1 (71) heads a subgroup of rules that introduce taddhita affixes called *vibhakti* Moreover, there is a subset of taddhita elements introduced as the final parts of compounds (*samāsāntāḥ*), by rules under the heading of

A 5.4.68: समासान्ताः। (*samāsāntāḥ*)

Other large groups of sūtras are similarly subdivided. For example,

A 6.4.129: भस्य। (*bhasya*)

heads a group of rules within the section headed by A 6.4.1 (105). Sūtras of this subsection, which extends to the end of

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the fourth pāda of the sixth adhyāya, concern elements of the bha class (A 1.4.18 [75]). This group of rules is pertinent for another subgroup of rules concerning stems, a section headed by

A 6.4.22: **असिद्धवदत्राभात्।** (*asiddhavad atrā bhāt*)

Whatever results from applying a sūtra of this section is treated as suspended (*asiddhavat*) with respect to any other operation provided by a rule of the group that extends through the one headed by A 6.4.129 (*ā bhāt*), provided the operations in question have the same conditioning element. See 659-660.

In addition,

A 6.4.46: **आर्धधातुके।** (*ārdhadhātuke*)

A 7.3.10: **उत्तरपदस्य।** (*uttarapadasya*)

respectively head subsections of rules concerning operations that affect stems before ārdhadhātuka affixes (63) and second members of compounds (*uttarapadasya*).

The subsection of rules headed by

A 8.1.17: **पदात्।** (*padāt*)

deals with operations that concern a pada (*padasya*: A 8.1.16 [105]) following another pada (*padāt*).

112 Two groups of sūtras can overlap. As I pointed out (see 111), the groups of rules headed by A 4.1.1, 3 and A 4.1.76 overlap in that some taddhita affixes are feminine suffixes. Similarly, the sections headed by A 8.1.16 and A 8.2.1 (105, 109) overlap: Some, but not all, operations relative to padas have to be included among those provided by crucially ordered rules of the tripādī.

113 Although headings considered thus far are separately formulated sūtras, they nevertheless cannot be considered independent rules. For example, A 3.1.1 (15) consists merely of the nominative singular *pratyayaḥ*. Even when one supplies the verb form *asti* or *bhavati* (see 11, 13), A 3.1.1 cannot be understood of itself to provide any operation. It does not tell

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us what *pratyayaḥ* refers to; nor does the sūtra give any elements with which something else occurs. Moreover, A 3.1.1 is not a saṁjñāsūtra comparable to a rule like A 3.4.113 (63), since it does not itself specify the items to which the class name in question applies. It is clear that A 3.1.2 also does not provide anything independently. Of course, the term *paraḥ* (nom. sg. masc.) must refer to something that follows something else, but the sūtra does not tell one what is supposed to occur or what it follows. Further, since A 3.1.2 has *ca* 'and, also', it has to be construed with something else. Again, A 3.1.91 (66, 105) and A 4.1.1 (105) consist of single terms that cannot be understood independently to provide for anything. In addition, even if *asti* or *bhavati* is supplied, the ablatives *dhātoḥ* and *ṅyapprātipadikāt* cannot be construed with such a verb form. In accordance with normal Sanskrit syntax, such ablative forms are properly construed with the directional term *paraḥ* of A 3.1.2. In effect, headings such as these have to combine with rules in the sections they head, only then forming parts of full statements that provide for operations. The different contexts into which such terms are brought may also require modifying endings, just as different verb forms --- *asti / bhavati, staḥ / bhavataḥ, santi / bhavanti* --- are supplied according to context. For example, a given context may require one to understand the plural *pare* instead of the singular *paraḥ* that actually occurs in A 3.1.2. See 121.

114 Parts of sūtras are also understood to recur in subsequent rules. For example,

A 3.3.16: **पदरुजविशस्पृशो घञ्** (*padarujaviśaspṛśo ghañ*)

contains the term *ghañ*: The rule provides that the affix *ghañ* is introduced after the verbs *pad, ruj, viś, spṛś,* thus accounting for the derivates *pāda* 'foot', *roga* 'illness', *veśa* 'entry, house', *sparśa* 'affliction'. *ghañ* is understood in A 3.3.18,19 (111): A derivate such as *hāra* of *āhāra* is formed

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with the affix *ghañ*.

Similarly, consider the following

A 3.3.94: **स्त्रियां क्तिन्।** (*striyāṁ ktin*)

provides that the affix *ktin* follows a verb under the conditions given in A 3.3.18-19, provided that the act or participant in question is qualified as feminine (*striyām*); e.g., the feminine abstract noun derivate *kṛti* 'doing, deed, work'. Rules after A 3.3.94 also introduce affixes to form feminine derivates, but they do not contain the term *striyām*. This is understood to recur in these sūtras from A 3.3.94.

115 That a term used in one part of an extended context may be understood later in the context without being repeated is known from ordinary usage. Consider an example taken from Patañjali's comments on vārttika 5 to A 1.3.11 (Bh. I.272.7-8):

(3) a. **देवदत्ताय गौर्दीयताम्।** (*devadattāya gaur dīyatām*) 'Let a cow be given to Devadatta.'

b. **यज्ञदत्ताय कम्बलः।** (*yajñadattāya kambalaḥ*) 'A blanket to Yajñadatta.'

c. **विष्णुमित्राय च।** (*viṣṇumitrāya ca*) 'Also to Viṣṇumitra.'

Only (3a) contains an explicit verb form: *dīyatām* (3sg. pres. pass. imper.) 'let ... be given'. This is understood in (3b,c). Similarly, *kambalaḥ* 'blanket' of (3b) is understood in (3c). But *gauḥ* 'cow' of (3a) is not understood to recur in (3c). A new object of giving is referred to in (3b), where *kambalaḥ* is used. According to conventions of normal usage, this serves to set aside the old object of giving referred to by *gauḥ*. New matter brought up in an extended context supersedes old matter spoken of earlier in the context, and a term designating such new matter is understood later in that context.

However, this convention is not always observable in the Aṣṭādhyāyī. For example, the following sūtras serve to introduce different verb affixes:

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A 3.3.44: **अभिविधौ भाव इनुण्।** (*abhividhau bhāva inuṇ*)

A 3.3.45: **आक्रोशेऽवन्योर्ग्रहः।** (*ākrośe'vanyor grahaḥ*)

Both rules are part of the section headed by A 3.1.91 (66), within the major section of rules that A 3.1.1 (15) heads, so that they introduce verbal affixes. By A 3.3.44, *inuṇ* follows a verb if an act in the abstract is to be signified (*bhāve*), provided that this is qualified as an encompassing act (*abhividhau*); e.g., *sāmrāviṇa* 'shouting from all sides'. A 3.3.45 should provide that *grah* used with *ava* or *ni* (*avanyoḥ*) takes the suffix *ghañ* if an abstract act is to be signified, provided also that a curse or abuse is conveyed (*ākrośe*): *avagrāha* 'defeat', *nigrāha* 'reversal', used in wishing that someone be defeated or taken. The term *ghañ* should be understood to recur in A 3.3.45 from A 3.3.17, although a new affix, *inuṇ*, is brought up in A 3.3.44.

In addition, consider again A 3.1.94 (110). *strī*, included in the compound *astrī* (loc. sg. *astriyām*) should be understood to refer to *strī* (loc.sg. *striyām*) used in A 3.3.94 (114). In this way, one can understand *astriyām* of A 3.1.94 to exclude affixes provided by rules of a particular section, those headed by A 3.3.94.

To show that a particular term is understood to recur contrary to the usual conventions of ordinary language ellipsis and to allow referring to particular headings, some special provision has to be made. This is done in

A 1.3.11: **स्वरितेनाधिकारः।** (*svaritenādhikāraḥ*)

according to which an adhikāra (*adhikāraḥ*) --- that is, an element understood to be in force in sūtras after the one in which it first occurs --- is recognized by a special feature of pronunciation, a svarita vowel (*svaritena*: A 1.2.31 [36]). Thus, *ghañ* in A 3.3.17 is recited with this feature, but *inuṇ* of A 3.3.44 is not, so that the former is understood to recur in A

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3.3.45. *striyām* of A 3.3.94 also has the feature that shows it to be an adhikāra, and *astriyām* of A 3.1.94 is pronounced with the same accentual feature, showing that this refers to the heading in question.

Remarks.

116 1. Pāṇini's sūtras as handed down no longer have svarita vowels marking adhikāras in accordance with A 1.3.11 (115). The Kāśikā on this sūtra (1.53: **प्रतिज्ञास्वरिताःपाणिनीयाः।**; see also VPP 122 [PS p. 42]) notes that Pāṇinīyas recognize such svarita marking only by convention (*pratijñāsvaritāḥ*), in accordance with what authoritative teachers have established earlier (cf. 86).

117 2. Pāṇinīyas use the verb *vṛt* (3sg. pres. ind. *vartate*) 'occur' or *anu-vṛt* (*anu vartate*) 'recur' with reference to a term which is understood to recur in a particular place but is used explicitly only earlier in a context, and the action noun *anuvṛtti* to signify the recurrence of such a term. It is also recognized that endings (*vibhakti*: A 1.4.104 [65, 67]) may have to be modified (*vibhaktivipariṇāmaḥ* 'modification of endings') according to the particular context in which a recurring element is understood, in accordance with what is meant (*arthavśāt*): **अर्थवशाद्विभक्तिविपरिणामः।** (see PS p. 468, no. 56 for references to this paribhāṣā, whose exact wording has variations). In the course of several arguments in the Mahābhāṣya, it is said that such contextual modification of endings will occur (*bhaviṣyati*), and the following examples are given to illustrate how this takes place in common usage:

(4) a. **उच्चानि देवदत्तस्य गृहाणि।** (*uccāni devadattasya gṛhāṇi*) 'Devadatta's houses are high.'

b. **आमन्त्रयस्वैनम्।** (*āmantrayasvainam*) 'Call him.'

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(5) a. देवदत्तस्य गावोऽश्वा हिरण्यं च। (*devadattasya gāvo'śvā hiraṇyaṁ ca*) 'Devadatta has cows, horses, and gold.'

b. आढ्यो वैधवेयः। (*āḍhyo vaidhaveyaḥ*) '... is a rich son of a widow.'

(4a) has the genitive *devadattasya* 'of Devadatta', and the person spoken of is again referred to in (4b), where the pronoun *enam* 'him' is used. The accusative *enam* is construed with a coreferential *devadattam,* which is gotten by modifying the genitive of (4a). Similarly, the genitive *devadattasya* of (5a) is modified to the nominative *devadattaḥ,* understood to be coreferential with the nominatives in (5b). See, for example, Mahābhāṣya I.264.14-17 (on A 1.3.9). Clearly, the principle in question is known from everyday usage (see, for example, Puruṣottama's comments in his Laghuparibhāṣāvṛtti on paribhāṣā 88 [PV p. 150]).

1.1.3. Restrictive and negative rules.

118 Some sūtras of the Aṣṭādhyāyī are restrictive (*niyamasūtra*). For example, A 1.4.8 (58) provides that *pati* has the class name *ghi* only in a compound, thereby restricting what would obtain more generally by A 1.4.7 (57). Many metarules (Section 1.1.2.2) are restrictive. Left to his own devices, a Sanskrit speaker could not decide on a single interpretation for a genitive in a context that does not allow only one interpretation. A 1.1.49 (90) specifies what is to be understood in such instances, excluding other possible interpretations. Similarly, A 1.1.66, 67 specify how one is to interpret locative forms denoting loci and ablative forms in contexts where Sanskrit speakers could not arrive at single interpretations from the contexts. Metarules also serve to specify particular replacements for given substituends (92, 94) and substituends for given replacements (95-97).

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In addition, restrictive rules can account for the distribution of certain elements. There is, for example, a group of niyamasūtras that allow for the proper distribution of parasmaipada and ātmanepada affixes (see 137-143).

119 The Aṣṭādhyāyī also contains sūtras that state negations (*pratiṣedha, niṣedha*). Negative rules provide that, under given conditions, what would otherwise obtain does not (*na*). For example, A 4.1.10 (271) provides that feminine suffixes do not occur with items of the ṣaṣ class and members of the ordered set beginning with *svasṛ* 'sister'; by A 7.1.78 (489), the augment *num* is not added to a stem in which *śatṛ* follows an abhyasta element; A 6.1.104 (532) disallows a particular substitution in certain instances of contiguous vowels; A 1.4.4 (56) excludes particular items from the nadī class; A 1.1.4, 5, 58, 63 (98, 102, 103) are negative rules associated with metarules.

1.1.4. Examples showing how sūtras are interpreted.

120 The sūtras of the Aṣṭādhyāyī cohere. There are networks of rules related to each other, and it is normal that, in order to understand what a given sūtra provides and how this applies, one must take other rules into consideration.

121 Let us consider first the affixation rule

A 3.1.96: **तव्यत्तव्यानीयरः।** (*tavyattavyānīyaraḥ*)

This can be expanded to

(6) **धातोः परे तव्यत् तव्य अनीयर् इत्येते प्रत्यया भवन्ति।**

(*dhātoḥ pare tavyat tavya anīyar ity ete pratyayā bhavanti*) 'The affixes *tavyat, tavya, anīyar* occur after a verb.'

In accordance with A 1.1.68 (29), the nominative plural *tavyattavyānīyaraḥ* refers to linguistic elements: *tavyat, tavya, anīyar*. By A 1.3.3 (80), the final consonants of *tavyat* and *anīyar* are markers (*it*), so that they are unconditionally

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deleted (A 1.3.9 [81]). A 3.1.96 thus concerns two elements *tavya* (cf. A 3.1.3, 6.1.185 [592, 599]) and one element *anīya*. A convention of normal usage allows one to supply a verb meaning 'be, occur' for a verbless utterance such as A 3.1.96 (see 11, 13); since *tavyattavyānīyaraḥ* is plural, one supplies *santi* or *bhavanti*. Of course, A 3.1.96 of itself does not say what the elements referred to are or where they occur. But this sūtra is not meant to be understood in isolation. It is stated under two headings: A 3.1.1 and 3.1.91 (15, 66). The items alluded to have the class name *pratyaya* and occur with units called *dhātu*, that is, with verbs (A 1.3.1, 3.1.32 [47]). Moreover, A 3.1.2 (15) provides that, unless otherwise indicated, an element called *pratyaya* follows the unit to which it is introduced. The directional term *para* is regularly construed with ablative forms like *dhātoḥ*. The plural form *pare* is gotten by contextual modification (see 113, 117), which allows also for the plural *pratyayāḥ* instead of the *pratyayaḥ* given in A 3.1.1. Both *pratyayāḥ* and *pare* are construed appositionally with *tavyattavānīyaraḥ*. Finally, according to the heading A 3.1.95 (66), *tavyat*, *tavya*, and *anīyar* belong to the kṛtya subclass of kṛt affixes (A 3.1.93). A 3.1.96 accounts for derived nominal bases (*prātipadika*: A 1.2.46 [48]) such as *vaktavya* (< *vac-tavya*), *vacanīya* 'which is to be said, sayable'.

122 Another sūtra stated under the headings that govern A 3.1.96 (121) is

A 3.1.97: **अचो यत्** (*aco yat*)

This introduces *yat*, also a post-verbal affix belonging to the kṛtya subset of kṛt affixes. Once more a verb form is understood, this time a singular *asti* or *bhavati* construed not only with *yat* but also with *pratyayaḥ* and *paraḥ*, understood from A 3.1.1-2. In addition, *paraḥ* is linked to the ablative *dhātoḥ* of the heading A 3.1.91. Another ablative form is given in A 3.1.97 itself: *acaḥ* (abl. sg.). The term *ac* is an abbreviation, formed in accordance with A 1.1.71 (83), that

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refers in the first instance to the vowels *a i uṛ ḷ e o ai au* of Pāṇini's akṣarasamāmnāya. By A 1.1.69 (84), each of these vowels denotes a set of homogeneous sounds, so that *ac* indirectly denotes all vowels. Now, since A 3.1.97 comes under the heading A 3.1.91, *yaṭ* is introduced after a verb (*dhātoḥ paraḥ*), not merely after a vowel. However, a vowel can obviously be part of a verb, which it thereby qualifies. In particular, there are verbs that end in vowels. By A 1.1.72 (30), *acaḥ* of A 3.1.97 refers to a verb ending in a vowel (*ajantāt*). When finally interpreted with the aid of the sūtras noted, A 3.1.97 can be paraphrased as follows:

(7) **अजन्ताद्धातोः परो यत्प्रत्ययो भवति।** (*ajantād dhātoḥ paro yatpratyayo bhavati*) 'The affix *yaṭ* occurs after a verb that ends in a vowel.'

This sūtra accounts for derivates such as *ceya* (< *ci-ya*) 'which is to be gathered, heaped', from the verb *ci*.

123 Although A 3.1.97 (122) concerns in particular verbs that end in vowels and A 3.1.96 (121) has to do with verbs in general, this does not preclude the use of *tavyaṭ, tavya,* and *anīyar* with verbs ending in vowels. One also has derivates like *cetavya* (< *ci-tavya*) and *cayanīya* (< ... *ci-anīya*), from the verb that forms *ceya* by A 3.1.97. According to A 3.1.94 (110), verb affixes introduced by rules in the section beginning with A 3.1.91 alternate with each other, provided they are not homophonous and do not belong to a specified subgroup of affixes.

124 The section of sūtras that begins with A 6.4.1 (105) includes

A 7.3.36: **अर्त्तिह्रीव्लीरीक्नूयीक्ष्माय्यातां पुङ्णौ।**

(*arttihrīvlīrīknūyīkṣmāyyātām puṅ ṇau*)

Once more, a verb form *asti* or *bhavati* is supplied, now construed with the nominative *puṅ*. The sūtra also contains the genitive plural *arttihrīvlīrīknūyīkṣmāyyātām* and the locative singular *ṇau*, which refers to an affix *i* with the initial marker

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ṇ. According to the metarule A 1.1.66 (90), which must be brought into play to interpret the locative *ṇau,* this term denotes a right context, an element before which something applies to a preceding element. The operands in question are denoted by the genitive *arttihrīvlīrīknūyīkṣmāyyātām,* a form of a compound whose members are *artti, hrī, vlī, rī, knūyī, kṣmāyī,* and *āt. artti* is a citation form that refers to *ṛ* 'go, reach'. By A 1.1.68 (29), the next five terms of the compound signify the verbs *hrī* 'be ashamed', *vlī* 'press down', *rī* 'run, flow', *knūyī* 'be wet, creak', *kṣmāyī* 'shake', and by A 1.1.70 (85), *āt* denotes *ā*-vowels. Since A 7.3.36 is stated in the section headed by A 6.4.1, one understands a form of the term *aṅga,* namely the genitive plural *aṅgānām,* construed with the genitive plural in A 7.3.36. Thus, this sūtra states an operation that applies to the stems (*aṅga*: A 1.4.13 [46]) *ṛ-, hrī-, vlī-, rī-, knūyī-, kṣmāyī-,* and stems that end in *ā*-vowels (A 1.1.72 [30]), when these stems occur before an affix *ṇi.* Now, *puk* has the marker *k,* used to show that the element in question is an augment added as the final segment of an item. (A 1.1.46 [17]). Accordingly, the genitives *arttihrīvlīrīknūyīkṣmāyyātām aṅgānām* are partitive; they refer to presuffixal bases which have *p* as their final segment if an affix *ṇi* follows. When fully interpreted, then, A 7.3.36 can be paraphrased as follows:

(8) अर्त्ति ह्री व्ली री क्नूयी क्ष्मायी इत्येतेषामङ्गानाम् आकारान्तानाञ्च पुगागमो भवति णौ परतः। (*artti hrī vlī rī knūyī kṣmāyī ity eteṣām aṅgānām ākārāntānāñ ca pugāgamo bhavati ṇau parataḥ*) 'The stems *ṛ-, hrī-, vlī-, rī-, knūyī-, kṣmāyī-* and stems that end in *ā* have the augment *puk* when *ṇi* follows.'

This rule accounts for augmented stems in derivates such as *arpi* (< *ṛp-i* < *ṛ-i*) 'have go, send', *hrepi* (< *hrīp-i* < *hrī-i*) 'make ashamed', *dāpi* (< *dā-i*) 'cause to give', with the causal affix *ṇic* (A 3.1.26 [281]).

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125 Pāṇini's general rule of semivowel replacement is:

A 6.1.77: इको यणचि। (*iko yaṇ aci*)

Again, *asti* or *bhavati* is supplied, to be construed with the nominative singular *yaṇ*. In addition to *yaṇ*, this sūtra contains the genitive singular *ikaḥ* and the locative singular *aci*. The terms *ik*, *yaṇ*, and *ac* are interpreted with the aid of A 1.1.71 (83): *ik* refers to *i u ṛ ḷ*, *yaṇ* to *y v r l*, and *ac* to *a i u ṛ ḷ e o ai au*. In turn, by A 1.1.69 (84), these sounds denote sets of homogeneous sounds. There is nothing in A 6.1.77 to show precisely how the referents of *ik*, *yaṇ*, and *ac* are related, so that the metarules A 1.1.49, 66 (90) come into play: The genitive *ikaḥ* refers to substituends, the locative *aci* to right contexts in which substitution applies. As can be seen from the above, the immediate referents of *ik* and *ac* are the same in number, so that, by A 1.3.10 (91), the substituends and their replacements are related in order. Thus, A 6.1.77 is understood to provide that the semivowels *y v r l*, respectively, substitute for *i-*, *u-*, *ṛ-*, and *ḷ-* vowels before vowels. Moreover, since this sūtra is stated under the heading A 6.1.72 (107), the substitution is allowed only if the vowels and the right contexts in question are in close junction. See 20, 102.

126 The term *ṇau* of A 7.3.36 (124) is understood to recur in later sūtras, including

A 7.3.43: रुहः पोऽन्यतरस्याम्। (*ruhaḥ po'nyatarasyām*)

a rule which also states an operation that applies to a stem (*aṅgasya*: A 6.4.1 [105]) when an affix *ṇi* follows. The sūtra contains the genitive singular *ruhaḥ*, construed with *aṅgasya*. Once more, A 1.1.49 is brought into play, to interpret *ruhaḥ* and *aṅgasya*: The rule states a substitution. Moreover, as provided for by A 1.1.52 (95), only the final sound of *ruh* 'arise, mount, sprout' is subject to replacement. The substitute provided for is simply the sound *p* (nom.sg. *paḥ*). Thus, according to A 7.3.43, the *-h* of the stem *ruh-* is optionally (*anyatarasyām*: A 1.1.44 [31]) replaced by *-p* when an affix *ṇi*

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follows, as in *ropi / rohi* (3sg. pres. ind. act. *ropayati / rohayati*), with the causative suffix *ṇic*.

127 Two other sūtras of the group headed by A 6.4.1 (105) are

A 7.3.84: सार्वधातुकार्धधातुकयोः। (*sārvadhātukārdhadhātukayoḥ*)

A 7.3.86: पुगन्तलघूपधस्य च। (*pugantalaghūpadhasya ca*)

The term *guṇaḥ* of A 7.3.82: मिदेर्गुणः। (418) is understood to recur in each of these rules. The locative dual *sārvadhātukārdhadhātukayoḥ*, given in A 7.3.84 and understood in A 7.3.86, is interpreted with the aid of A 1.1.66 (90). Each of these sūtras states an operation that applies when a sārvadhātuka or ārdhadhātuka affix (A 3.4.113-117 [63]) follows. The rules provide that guṇa vowels (A 1.1.2 [91]) occur. In addition, the term *guṇa* is used to refer to these replacements. Therefore, the metarule A 1.1.3 (97) comes into play, specifying the substituends for the guṇa vowels *a e o*. In this manner, two genitive forms are understood in A 7.3.84: *aṅgasya* of the heading A 6.4.1 and *ikaḥ* gotten from A 1.1.3. Moreover, the operational rule does not refer to any particular stems, and presuffixal bases in general can end with *i ī u ū ṛ ṝ ḷ*. Thus, *ikaḥ* is to be understood as a qualifier of *aṅgasya*, so that, by A 1.1.72 (30), it refers to a stem in *-i -ī -u -ū -ṛ -ṝ -ḷ*. In sum, A 7.3.84 provides that the final sound (A 1.1.52 [95]) of a stem ending in one of these vowels is replaced by a guṇa vowel when a sārvadhātuka or an ārdhadhātuka suffix follows. In accordance with A 1.1.50-51 (92-93), *e o a* substitute for members of the respective pairs *i ī, u ū, ṛ ṝ*; and *a* which replaces *ṛ* or *ṝ* is automatically followed by *r*. A 7.3.86 provides that a guṇa vowel also (*ca*) substitutes for *i-*, *u-*, *ṛ-*, and *ḷ-* vowels of a stem that ends in the augment *puk* (*puganta*) or one that has a light vowel (*laghu*: A 1.4.10 [37]) as its penultimate sound (*upadhā*: A 1.1.65 [41]) (*pugantalaghūpadhasya*). By A 1.1.3, the

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light vowels in question are *i u ṛ ḷ*. The guṇa replacement provided for in A 7.3.84, 86 does not apply if the stem in question precedes a sārvadhātuka or ārdhadhātuka suffix marked with *g, k,* or *ñ* or an ārdhadhātuka affix before which part of a verb is deleted (A 1.1.4-5 [98]). Examples of derivates formed with the application of A 7.3.84, 86 are: *cetavya* < *ci-tavya, stotavya*< *stu-tavya, kartavya* < *kṛ-tavya* (A 3.1.96 [121]), *hrepi* < *hrīp-i, arpi* < *ṛp-i-* (A 7.3.36 [124]).

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1.2. Pāṇini's akṣarasamāmnāya.

128 Pāṇini's akṣarasamāmnāya, the sound catalog that accompanies his corpus of sūtras, consists of fourteen groups of sounds, each closed by a consonantal marker (*it*: A 1.3.3 [80]), as shown in figure C (p. 95). The sounds Pāṇini includes in his akṣarasamāmnāya and the order in which he arranges them reflect the purpose for which he set up this ancillary to his grammar: in order to refer, by means of terms interpreted with the aid of A 1.1.71 and 1.1.69 (83-84), to sets of sounds with respect to operations as formulated in sūtras.

129 Pāṇini uses forty-one pratyāhāras denoting groups of sounds as arranged in his akṣarasamāmnāya:

al: all sounds (*varṇāḥ*)
ac: vowels (*svarāḥ*)
hal: consonants (*vyañjanāni*)

Vowel groups:

ak: *a i uṛ ḷ* (*samānākṣarāṇi* 'simple vowels')
aṇ: *a i u*
ic: *i uṛ ḷ e o ai au* (*nāminaḥ* 'retroflexing vowels')
ik: *i uṛ ḷ*
uk: *uṛ ḷ*
ec: *e o ai au* (*sandhyakṣarāṇi* 'complex vowels')
eñ: *e o*
aic: *ai au*

Groups of vowels and consonants:

aś: vowels and voiced consonants
am: vowels, *h*, semivowels, and nasal stops
aṇ: vowels, *h*, and semivowels
aṭ: vowels, *h*, and semivowels other than *l*
iṇ: vowels other than *a*; *h* and semivowels

Consonant groups:

haś: voiced consonants (*ghoṣavantaḥ*)
yar: semivowels, stops, and voiceless spirants
yay: semivowels and stops

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Figure C. Pāṇini's akṣarasamāmnāya (Section 1.2).

अ इ उ ण्(१) ऋ ऌ क्(२) ए ओ ङ्(३)
ऐ औ च्(४) ह य व र ट्(५) ल ण्(६)
ञ म ङ ण न म्(७) झ भ ञ्(८) घ ढ ध ष्(९)
ज ब ग ड द श्(१०) ख फ छ ठ थ च ट त व्(११)
क प य्(१२) श ष स र्(१३) ह ल्(१४)

(1) *a i u ṇ* (2) *ṛ ḷ k* (3) *e o ṅ* (4) *ai au c*

(5) *h y v r ṭ* (6) *l ṇ* (7) *ñ m ṅ ṇ n m*

(8) *jh bh ñ* (9) *gh ḍh dh ṣ* (10) *j b g ḍ d ś*

(11) *kh ph ch ṭh th c ṭ t v* (12) *k p y*

(13) *ś ṣ s r* (14) *h l*

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yañ: semivowels, nasal stops, *jh bh*
yam: semivowels and nasal stops
yaṇ: semivowels (*y v r l* [*antaḥsthāḥ*])
val: consonants other than *y*
vaś: voiced consonants other than *y*
ral: consonants other than *y* and *v*
may: stops other than *ñ*
ñam: *ñ ṇ n*
jhal: consonants other than nasal stops and semivowels
jhar: nonnasal stops, voiceless spirants
jhay: nonnasal stops
jhaś: voiced nonnasal stops
jhaṣ: voiced aspirated stops
bhaṣ: voiced aspirated stops other than *jh* (i.e., *bh gh ḍh dh*)
jaś: voiced unaspirated nonnasal stops (i.e., *j b g ḍ d*)
baś: voiced unaspirated nonnasal stops other than *j* (i.e., *b g ḍ d*)
khar: voiceless stops, voiceless spirants
khay: voiceless stops
chav: *ch ṭh th c ṭ t*
car: voiceless unaspirated stops, voiceless spirants
śal: spirants (*ūṣmāṇaḥ*)
śar: voiceless spirants

Some of these abbreviations replace traditional terms given in parentheses (see also 43).

130 Pāṇini's akṣarasamāmnāya does not include the long vowels *ā ī ū ṝ ḹ*. Recall that semivowel substitution by A 6.1.77 (125) applies to both long and short *i-*, *u-*, *ṛ-* vowels and that guṇa substitution as provided for in A 7.3.84 , 86 (127) applies to both long and short vowels: not only *dadhy atra* < *dadhi atra*, *cetavya* < *ci-tavya* but also *kumāry atra* < *kumārī atra* (*kumārī* 'girl'), *netavya* < *nī-tavya* (*nī* 'lead, guide'), and so on. The substitution of a single long vowel for *a ā i ī u ū ṛ ṝ ḷ ḹ* and a following homogeneous vowel (A 6.1.101 [532]) applies whether the contiguous vowels are long or short, and vṛddhi replacement in the right context of affixes marked with *ñ* or

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ṇ applies to vowels in general (**A** 7.2.115 [417]). In all such major cases, the distinction between short and long vowels is not pertinent.

Pāṇini proceeds in a manner which captures this. The elements pertinent to the operations noted are referred to by the abbreviations *ik, ak, ac,* which denote in the first instance vowels given in the akṣarasamāmnāya. By **A** 1.1.69 (84), these vowels then denote sets of vowels. Where it is necessary to refer to short or long vowels in particular, then, Pāṇini uses either *hrasva, dīrgha* (**A** 1.2.27 [35]) or a term of the type **Vt** (**A** 1.1.70 [85]).

On the other hand, Pāṇini lists the voiced spirant *h* twice, in the fifth and fourteenth subgroups of his sound catalog. Operations require that this consonant accompany both other voiced consonants (e.g., *haś*: **A** 6.1.114 [525]) and other spirants (e.g., *śaṭ*: **A** 3.1.45 [236]). Pāṇini's way of formulating his rules also requires a pratyāhāra referring to all voiced segments (*aś*: **A** 8.3.17 [557]), so that he could not follow the order of sounds found in other sound catalogs, namely: vowels, stops, semivowels, and spirants, with voiceless stops preceding voiced ones (see 43). Further, in his derivational system Pāṇini operates with posited basic forms of elements (see Section 4.2). There are basic forms with *-s* but none with the pharyngeal spirant *-ḥ* (*visarjanīya*), the velar spirant *-ẋk* (*jihvāmūlīya*), or the bilabial spirant *-ẋp* (*upadhmānīya*). None of these, then, is included in Pāṇini's akṣarasamāmnāya.

In sum, the catalog of sounds that accompanies the Aṣṭādhyāyī is an ancillary to this corpus of rules, arranged in a manner that allows referring to sets of sounds pertinent to operations as Pāṇini formulates them.

Remark.

131 Pāṇinīyas use several terms to refer to Pāṇini's sound catalog. The oldest of these is *akṣarasamāmnāya,* used in the Mahābhāṣya (I.16.22, 24: 36.16; 179.8; III.465.17), where

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Patañjali also uses *ākṣarasamāmnāyika* 'found in the akṣarasamāmnāya' (Bh. I.15.22-28, 26.9) with reference to sounds of this catalog. The term *akṣarasamāmnāya* is equivalent to *varṇasamāmnāya,* used elsewhere (e.g., TPr. I.1: **अथ वर्णसमाम्नायः।** [*atha varṇasamāmnāyaḥ*] 'Now the traditional set of sounds.') of a sound catalog: *akṣara* and *varṇa* both denote sounds. Abbreviations like *ac, hal,* formed in accordance with **A** I.1.71 (83), are called *pratyāhāra,* and the groups of sounds in the akṣarasamāmnāya, intended to allow such abbreviations, are also known as *pratyāhārasūtrāṇi* (RA I.1, PrK I.14) or simply *pratyāhārāḥ* (BhV 1). There is also a later tradition that the great lord Śiva (*maheśvara*) sounded his ḍhakkā drum fourteen times and revealed the fourteen groups of sounds to Pāṇini. Nandikeśvara recounts this in the first verse of his Kāśikā, where (NKāś. 148) he uses *śivasūtrajālam* 'the group of śiva-sūtras'. Some versions of the metrical Pāṇinīya-śikṣā also have a verse (Pañjikā 22, Ṛk 57, Yajus 34, Rudraprasāda 57: **येनाक्षरसमाम्नायमधिगम्य महेश्वरात्। कृत्स्नं व्याकरणं प्रोक्तं तस्मै पाणिनये नमः॥**) in which it is said that Pāṇini promulgated his grammar after receiving the akṣarasamāmnāya as a teaching from the great lord Śiva (*akṣarasamāmnāyam adhigamya maheśvarāt*). The subgroups of Pāṇini's sound catalog are accordingly known also as *māheśvarasūtrāṇi* (SK I.4) 'sūtras that emanate from the great lord Śiva'

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1.3. Pāṇini's dhātupāṭha.

1.3.0. Introduction.

132 According to A 1.3.1 (47), items of the set that begins with *bhū* have the class name *dhātu*. These are primitive verbal bases listed in Pāṇini's dhātupāṭha, his catalog of verbs. This text gives verbs in forms associated with operations, accompanied by markers (Section 1.3.1), and is divided into ten major groups with subgroups (Section 1.3.2). The dhātupāṭha also includes certain sūtras (Section 1.3.3).

Remark.

133 In the dhātupāṭha as transmitted by commentators, verbs are accompanied by glosses. For example, the first entry is भू सत्तायाम् (*bhū sattāyām*). This includes the locative *sattāyām* 'being', construed with the supplied term *vartate* 'occurs' (MDhV 1.1 [p. 2]: भू सत्तायाम् वर्तत इति शेषः।): '*bhū* (occurs) in (the meaning) "being".' It is pretty certain, however, that the dhātupāṭha in the form known to earliest Pāṇinīyas such as Kātyāyana and Patañjali did not contain these glosses. Thus, in his first and second vārttikas on A 1.3.1 (47) Kātyāyana argues that certain things have to be done if the class name *dhātu* is assigned to items by virtue of their being recited in the dhātupāṭha (*pāṭhena dhātusaṁjñāyām*). One has to deny the name to certain items which are homophonous with elements listed in the dhātupāṭha (*samānaśabdapratiṣedhaḥ,* A1.3.1 vt. 1: पाठेन धातुसंज्ञायां समानशब्दप्रतिषेधः।). For example, the particle *vā* 'or' should not be called *dhātu,* but this name should apply to *vā* 'blow'. In addition, it is necessary to specify that such and such a particular stretch constitutes a given unit (*parimāṇagrahaṇaṁ ca*): One must know that *bhū* and *edh* ('thrive') are distinct units, the first two verbs of the

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dhātupāṭha, and that the complex *bhvedh* is not a single unit given the name *dhātu.* [vt. 2: **परिमाणग्रहणं चा,** Bh. I.254.11-12 : **कुतो ह्येतद् भूशब्दो धातुसंज्ञो भविष्यति न पुनर्भ्वेध्शब्द इति।**] Now, obviously, if glosses were given along with verbs in the dhātupāṭha known to Kātyāyana, the name assigned to an item such as *vā* accompanied by its gloss would not apply equally to *vā* meaning 'or', and there would be no question of not discriminating between entries such as *bhū* and *edh,* since the gloss for the first would come between the two items.

Pāṇinīyas are aware of this. Kaiyaṭa remarks (Pr. II.178: **न चार्थपाठः परिच्छेदकः तस्यापाणिनीयत्वात्।**) that the glosses recited along with verbs in the available dhātupāṭha cannot have served to separate units originally, since these glosses are not Pāṇinian. As Bhaṭṭoji notes (ŚK II.49: **पाणिनिस्तु भ्वेध इत्याद्यपाठीदिति भाष्यवार्त्तिकयोः स्पष्टम्।**), Kātyāyana's and Patañjali's statements make it clear that in the dhātupāṭha they knew one had simply *bhvedha* and so on (see below), without intervening glosses. Commentators inform us that these meaning entries were added by post-Pāṇinian grammarians, foremost among them Bhīmasena; see, for example, Pr., Ud. II.178, ŚK II.49. In addition, the glosses that do appear in the dhātupāṭha as handed down by commentators such as Kṣīrasvāmin, Maitreya, and Sāyaṇa are considered only illustrative, not exclusive, since verbs have meanings additional to those given; see, for example, Pr. II.178-179, MDhV p. 2 (under 1.2), ŚK II.49.

The lack of glosses in Pāṇini's original dhātupāṭha does not really cause problems in determining what are the units listed, since these items were recited with markers and base pitches that in effect demarcate separate bases. For example, the first two items of the first major group in the dhātupāṭha are **भू एध्** (*bhū́ édha*).

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1.3.1. Shapes of verbs and metalinguistic features.

134 The forms verbs have as they are listed in the dhātupāṭha are not necessarily those in which they appear when used in actual speech. For example, word-interior sequences *-ns-*, *-nc-*, *-djh-*, and *-sj-* do not occur in ordinary Sanskrit. Instead, one has *-ṁs-*, *-ñc-*, *-jjh-*, and *-jj-*, as in *dhvaṁsate* (3sg. pres. ind. mid.) 'falls, perishes', *luñcati* 'tears away', *ujjhati* 'abandons', and *bhṛjjati* 'fries'. The primitive forms of the verbs in question as given in the dhātupāṭha, however, are *dhvans* (*dhvánsu*), *lunc* (*lúncá*), *udjh* (*údjhá*), and *bhrasj* (*bhrasjá*). These are basic forms, which Pāṇini posits on the grounds of well founded principles and operations as formulated in his Aṣṭādhyāyī (see Section 4.2.5).

135 In order to distinguish among operations connected with *s*-and *n*- of verbs, Pāṇini similarly posits some verbs with *ṣ*- and *ṇ*-, others with *s*- and *n*-; for example, *ṣuñ* 'press juice out of something', *ṇamá* 'bend, bow', *sṛjá* 'let loose, create', *nṛtí* 'dance'. According to

A 6.1.64: धात्वादेः षः सः। (*dhātvādeḥ ṣaḥ saḥ*)

A 6.1.65: णो नः। (*ṇo naḥ*)

verb-initial (*dhātvādeḥ*) *ṣ*-(*ṣaḥ* [*sthāne*]: A 1.1.49 [90]) and *ṇ*-(*ṇaḥ*[*sthāne*]) are unconditionally replaced by *s*-(*saḥ*[*bhavati*]) and *n*-(*naḥ* [*bhavati*]). The resulting *s*-and *n*- are then subject to replacement by *ṣ*- and *ṇ*- under particular conditions (see A 8.3.59, 8.4.14 [563, 572]).

136 As has already been illustrated (133-135), verbs are recited in the dhātupāṭha with additional features that also serve metalinguistic purposes. They have markers (*it*: A 1.3.2-8 [80]) and their base vowels are pronounced with distinct pitches. Thus, *bhū́, édha, dhvánsu, lúncá, údjhá, nṛ́tí* have high-pitched base vowels, and all but the first have vocalic markers attached to them: low-pitched *a, u* and high-pitched *á, í*. The base vowels of *adá* 'eat', *haná* 'strike, kill', *hu* 'pour oblations', *ñíbhī* 'be afraid', *bhrasjá, ṣuñ,* and

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sṛjā́ are low-pitched; *hu* has no appended marker, but *ñibhī* and *ṣuñ* are marked with *ñi* and *ñ*, *bhrasjà* with the svarita vowel *à*, the others with high-pitched *á*. All such markers are unconditionally dropped (A 1.3.9 [81]), leaving verbal bases in their posited basic forms.

137 One reason for which Pāṇini attaches markers to verbs is to state the distribution of parasmaipada and ātmanepada affixes (A 1.4.99-100 [64]). In the Pāṇinian derivational system, abstract L-affixes are introduced after verbs on condition that an agent or an object is to be signified or, with objectless verbs, on condition that an agent or an act itself is to be signified (A 3.4.69 [232]). L-affixes are replaced by verb endings or participial affixes (A 3.4.77-78, 3.2.124-126 [232, 262]), which are assigned to either the parasmaipada or the ātmanepada class. A series of restrictive sūtras provides that affixes of one or the other group occur under stated conditions. In this connection, three types of verbs are distinguished: those with low-pitched vowels (*anudātta*: A 1.2.30 [36]) or *ñ* as markers; those with svarita vowels (A 1.2.31) or *ñ* as markers; others. Distinctively accented vowel markers follow bases that end in consonants, and *ñ*, *ñ* are attached to vocalic bases. For example: *édha*, *śvitā* 'be white', *ṇísi* 'kiss', *yátī* 'make an effort', *ovijī* 'fear, tremble, flee', *dhvánsū*, *syándū* 'flow, run', *bā́dhṛ* 'oppress, check, suspend'; *bhrasjà*, *rudhìr* 'hold in, oppress, besiege', *tánù* 'stretch', *yā́cṛ* 'ask for, beg', *mucḷ* 'release', *cáṭè* 'ask for', *adá*, *haná*, *máthi* 'stir, churn, grind', *ṇṛtí*, *ású* 'throw', *ovrāscū* 'cut, hew', *krīḍṛ́* 'play, sport', *gamḷ́* 'go', *śíṅ* 'lie, sleep', *ṣuñ*.

138 According to

A 1.3.12: अनुदात्तङित आत्मनेपदम्। (*anudāttaṅita ātmanepadam*)

ātmanepada affixes follow a verb that has a low-pitched vowel or *ṅ* for a marker (*anudāttaṅitaḥ*). For example, the third singular present indicative forms *edhate*, *śvetate*, *niṁste*, *yatate*, *ud vijate* (with the preverb *ud*), *dhvaṁsate*, *syandate*,

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bādhate, śete contain the ātmanepada ending *te*: *śiṅ* has the marker *ṅ*, and the other verbs are marked with low-pitched vowels (137). In addition,

A 1.3.13: **भावकर्मणोः।** (*bhāvakarmaṇoḥ*)

provides that ātmanepada affixes alone occur for an L-affix introduced on condition that an act (*bhāva*) or an object (*karman*) is to be designated (*bhāvakarmaṇoḥ*). For example, *āsyate* and *kriyate*, with the suffix *yak* (A 3.1.67 [156]) and the ātmanepada ending *te* are both used with agentive instrumental forms like *devadattena*, as in

(9) **आस्यते देवदत्तेन।** (*āsyate devadattena*) 'Devadatta (*devadattena* 'by Devadatta') is sitting.'

(10) **देवदत्तेन कटः क्रियते।** (*devadattena kaṭaḥ kriyate*) 'A mat (*kaṭaḥ*) is being made (*kriyate*) by Devadatta.'

The ending *te* of *āsyate* in (9) --- a construction found in later Indo-Aryan also but which has no exact counterpart in English --- derives from the L-affix *laṭ* introduced after the verb *ās* 'be seated' on condition that the act in question is to be signified, but *te* of *kriyate* in (10) derives from *laṭ* which is introduced to signify an object, so that it is coreferential with the nominal *kaṭa* (nom. sg. *kaṭaḥ*).

139 Ātmanepada affixes occur with certain verbs if an agent is to be signified (*kartari*) and the result of the act in question (*kriyāphale*) is intended for that agent (*kartrabhiprāye*). By

A 1.3.72: **स्वरितञितः कर्त्रभिप्राये क्रियाफले।** (*svaritañitaḥ kartrabhiprāye kriyāphale*)

A 1.3.74: **णिच्श्च।** (*ṇicaś ca*)

these affixes occur, under the conditions noted, following a verb marked with a svarita vowel or *ñ* (*svaritañitaḥ*) and also (*ca*) after a derived verb (A 3.1.32 [47]) that ends in (A 1.1.72 [30]) *ṇic* (*ṇicaḥ*: A 3.1.25-26 [281]). For example, *bhṛjjate* 'is

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frying (something for himself)', *runddhe* 'is holding in (something for himself)', *tanute* 'is stretching, carrying out (something for himself)', *sunute* 'is pressing juice out of something (for himself)' have the ātmanepada ending *te*: *ṣuñ* is marked with *ñ*, the other verbs with svarita vowels. The verb *ḍukṛñ* 'do, make' is followed by ātmanepada endings under the conditions given in A 1.3.72: *kurute*; similarly, the causative *kāri* (< *kṛ-i*), with the suffix *ṇic*, takes ātmanepada affixes by A 1.3.74: *kārayate* is used if the agent in question has something done or made for himself.

140 As A 1.3.74 (139) concerns derived verbs, so does

A 1.3.62: **पूर्ववत्सनः।** (*pūrvavat sanaḥ*)

which deals with desideratives, derived verbs with the suffix *san* (A 3.1.7 [279]): ātmanepada affixes follow a verb that ends in this affix (*sanaḥ*) to signify an agent just as they would occur with the primitive verb that precedes *san* (*pūrvavat*). That is, the conditions that determine the use of ātmanepada affixes with a given primitive verb also determine the occurrence of these affixes with a desiderative from that verb. Thus, as *édha* takes ātmanepada affixes (A 1.3.12 [138]), so does *edidhiṣa* 'wish to thrive': *edidhiṣate*. A desiderative of *ṣuñ* takes ātmanepada affixes under the conditions given in A 1.3.72 (139): *susūṣate* is used if the agent in question wishes to press juice out of something for himself.

141 Some verbs take ātmanepada affixes if they are used with certain preverbs or in particular meanings. For example, *ḍukrīñ* is regularly followed by agentive ātmanepada suffixes under the conditions stated in A 1.3.72 (139): *krīṇīte* 'buys (something for himself)'. According to

A 1.3.18: **परिव्यवेभ्यः क्रियः।** (*parivyavebhyaḥ kriyaḥ*)

however, ātmanepada affixes follow *krī* (*kriyaḥ*) used with the preverbs *pari, vi, ava* (*parivyavebhyaḥ*). This holds when an agent is to be signified, even if the result of the act in question is not intended for that agent: *pari krīṇīte* 'buys, hires, pays back', *vi krīṇīte* 'sells', *ava krīṇīte* 'hires'. The

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sūtras

A 1.3.19: **विपराभ्याञ्जेः।** (*viparābhyāñ jeḥ*)

A 1.3.20: **आङो दोऽनास्यविहरणे।** (*āṅo do 'nāsyaviharaṇe*)

provide that ātmanepada affixes follow *ji* (*jeḥ*), *ḍudāñ* (*daḥ*) when an agent is to be signified. The first verb takes these suffixes when it is used with *vi, parā* (*viparābhyām*): *vi jayate* 'is victorious', *parā jayate* 'is overcome, cannot stand something'. Ātmanepada affixes follow *ḍudāñ* if this verb occurs with the preverb *āṅ* (*āṅaḥ*), provided it is not used with reference to opening ones mouth (*anāsyaviharaṇe*): *ā datte* 'takes, accepts'. *han* and *yam* also take ātmanepada affixes when they are used with the preverb *āṅ*, as in *ā hante* 'strikes', *ā yacchate* 'stretches, holds, restrains':

A 1.3.28: **आङो यमहनः।** (*āṅo yamahanaḥ*)

As provided for in

A 1.3.29: **समो गम्यृच्छिभ्याम्।** (*samo gamyṛcchibhyām*)

agentive ātmanepada suffixes follow *gam* and *ṛch* used with the preverb *sam* (*samaḥ*); e.g., *saṅ gacchate* 'comes together, fits with', *sam ṛcchate* 'comes together with, meets in conflict'. According to

A 1.3.66: **भुजोऽनवने।** (*bhujo'navane*)

ātmanepada affixes signifying agents follow *bhujá*, provided this verb is used in a meaning other than 'protect, serve, help' (*anavane*): *bhuṅkte* 'enjoys, eats', *bhunakti* 'protects, helps'.

142 A 1.3.78: **शेषात्कर्तरि परस्मैपदम्।** (*śeṣāt kartari parasmaipadam*)

concerns a remainder with respect to what is covered in earlier rules, such as those considered in 138-141. According to this sūtra, parasmaipada affixes follow a verb that is part of this remainder (*śeṣāt*), on condition that an agent is to be signified (*kartari*). That is, these affixes are used to signify

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agents if the conditions for the use of agentive ātmanepada affixes given in earlier rules are not met. Thus, agentive forms of *bhū́, adá, haná, hu, ñibhī, máthí, nṛ́tī́, ású, ovráścū́, krīḍṛ́, gamḷ́* have parasmaipada affixes: *bhavati* 'is, becomes', *atti* 'eats', *hanti* 'strikes, kills', *juhoti* 'offers oblations', *bibheti* 'is afraid, *manthati* 'stirs', *nṛtyati* 'dances', *asyati* 'throws', *vṛścati* 'cuts', *krīḍati* 'plays', *gacchati* 'goes'. These verbs are not marked with low-pitched or svarita vowels, with *ṅ* or with *ñ*. As opposed to *bhṛjjate, tanute, sunute, kurute* (see 139), the forms *bhṛjjati, tanoti, sunoti, karoti* are used if the agent spoken of performs the act in question for the benefit of someone other than himself. Members of the pairs *kārayate* : *kārayati* 'has do, has make', *susūṣate* : *susūṣati* wishes to press', *cikīrṣate*: *cikīrṣati* 'wishes to do, make' (see 139-140), *krīṇīte*: *krīṇāti* 'buys', *datte*: *dadāti* 'gives' contrast in a similar manner. On the other hand, agentive forms of *ḍukrīñ* used with *pari, vi,* or *ava* have only ātmanepada affixes (A 1.3.18 [141]), and the contrast between *ā datte* 'takes, accepts' and *ā dadāti* 'opens (his mouth)' is different from the contrast between *datte* and *dadāti* (A 1.3.20). In addition, *bhuṅkte* 'enjoys, eats' and *bhunakti* 'helps, protects' (A 1.3.66) do not contrast merely in that the result of the act in question is or is not intended for the agent. Further, *ji* preceded by the preverbs *vi, parā* takes ātmanepada affixes (A 1.3.19), but parasmaipada suffixes regularly follow the verb without preverbs, so that there is no contrast of the type noted: *jayati* 'is victorious'.

143 Under particular conditions, parasmaipada affixes are used to denote agents after verbs that are not part of the residual group covered by A 1.3.78 (142). Thus, according to

A 1.3.79: अनुपराभ्याङ् कृञः। (*anuparābhyāṅ kṛñaḥ*)

these affixes follow *ḍukṛñ* if this verb is used with either of the preverbs *anu, parā* (*anuparābhyām*): *anu karoti* 'imitates', *parā karoti* 'rejects'. In some instances, moreover, forms with ātmanepada and parasmaipada affixes alternate. Consider the

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verbs *dyūta* 'shine, be bright', *śvitā* 'be white', *ñimidā* 'be moist, melt', *vṛtu* 'occur, be', *vṛdhu* 'grow, become strong, old', *śṛdhu* 'fart', *syándū* 'flow, run', *kṛpū* 'be fit, appropriate'. These are taught with low-pitched vowel markers, since they generally take ātmanepada affixes in agentive forms (A 1.3.12 [138]); e.g., 3sg. pres. ind. *dyotate, śvetate, medate, vartate, vardhate, śardhate, syandate, kalpate*. On the other hand, agentive aorist forms of these verbs have either parasmaipada or ātmanepada endings: 3sg. aor. *adyutat / adyotiṣṭa, aśvitat / aśvetiṣṭa, amidat / amediṣṭa, avṛtat / avartiṣṭa, avṛdhat / avardhiṣṭa, aśṛdhat / aśardhiṣṭa, asyandat / asyandiṣṭa, akḷpta / akalpiṣṭa*. Hence, in

A 1.3.91: द्युद्भ्यो लुङि (वा कर्तरि परस्मैपदम्)

(*dyudbhyo luṅi* [*vā* 90, *kartari parasmaipadam* 78])

Pāṇini provides that parasmaipada affixes optionally (*vā*: A 1.1.44 [31]) follow verbs of the set beginning with *dyut* (*dyudbhyaḥ*) if an agent is to be signified (*kartari*) and the L-affix replaced by endings is *luṅ* (*luṅi*: A 3.2.110 [233]).

Now, these verbs have future forms of the type *dyotiṣyate, śvetiṣyate, mediṣyate, vartiṣyate, vardhiṣyate, śardhiṣyate, syandiṣyate, kalpiṣyate* and conditional forms of the type *adyotiṣyata, aśvetiṣyata, amediṣyata, avartiṣyata, avardhiṣyata, aśardhiṣyata, asyandiṣyat, akalpiṣyata*. In addition, as provided for by A 1.3.62 (140), desideratives derived from these bases take agentive ātmanepada affixes: *didyotiṣate, śiśvetiṣate, mimediṣate, vivartiṣate, vivardhiṣate, śiśardhiṣate, siṣyandiṣate, cikalpiṣate*. However, *vṛtu, vṛdhu, śṛdhu, syándū, kṛpū* are also followed by parasmaipada affixes in agentive future and conditional forms, and desideratives derived from these bases also have agentive forms with parasmaipada affixes: *vartsyati, vartsyati, śartsyati, syantsyati, kalpsyati; avartsyat, aśartsyat, asyantsyat, akalpsyat; vivṛtsati, vivṛtsati, śiśṛtsati, siṣyantsati, cikḷpsati*. Accordingly, Pāṇini provides in

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A 1.3.92: वृद्भ्यः स्यसनोः। (*vṛdbhyaḥ syasanoḥ*)

that parasmaipada affixes optionally occur with verbs of the subgroup beginning with *vṛt* (*vṛdbhyaḥ*) where the suffixes *sya* and *san* (A 3.1.33,7 [236, 279]) are used (*syasanoḥ*), that is, in future, conditional, and desiderative forms.

144 As I pointed out in 136, verbs are also of two types in that they are taught with high-pitched or low-pitched base vowels. This distinction between what are called *udātta* and *anudātta* verbs is linked to the occurrence and absence of the initial augment *iṭ* (A 1.1.46 [17]) with certain affixes, as in the following forms of *dyúta* 'shine, be bright' and *labha* 'gain': *adyotiṣṭa* (3sg. aor.), *dyotiṣyate* (3sg. fut.), *adyotiṣyata* (3sg. cond.), *dyotita* (past ptcple., nom. sg. nt. *dyotitam*), *dyotitum* (inf.); *alabdha* (< *alabh-s-ta* [cf. 1sg. aor. *alapsi*]), *lapsyate, alapsyata, labdha, labdhum*. The base *labha* is followed by *s* (*sic*: A 3.1.44 [236]), *sya* (A 3.1.33), *kta* (A 3.2.102 [294]), and *tumun* (A 3.3.10 [260]), but *dyúta* is followed by *iṣ* (< *is*), *iṣya, ita,* and *itum*. Similarly, the desiderative *lipsa* (*lipsate*) has the suffix *san* (A 3.1.7), but *didyotiṣa* (*didyotiṣate*) has *iṣa*. Thus, after an udātta verb, an affix such as *sic, sya, kta, tumun, san* generally appears with the augment *iṭ* (*seṭ*), but after an anudātta verb such an affix generally appears without this augment (*aniṭ*). Since verbs condition the presence or absence of the augment, by extension, udātta and anudātta verbs also are respectively called *seṭ* and *aniṭ*. The above is only the general situation, since certain affixes lack *iṭ* or have it only optionally, even after udātta verbs, and particular affixes take *iṭ* even after anudātta verbs.

145 The general rule concerning the augment *iṭ* is

A 7.2.35: आर्धधातुकस्येड् वलादेः। (*ārdhadhātukasyeḍ valādeḥ*)

according to which this augment occurs as part of an ārdhadhātuka affix (*ārdhadhātukasya*: A 3.4.114-116 [63]) that begins with a consonant other than *y* (*valādeḥ*). This sūtra comes under the heading of A 6.4.1 (105), so that *iṭ* is added to

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an affix when this follows a presuffixal base. As shown in 144, *dyotitum* contains the augmented ārdhadhātuka suffix *itum*; similarly *bhavitum, edhitum, dhvaṁsitum, luñcitum, ujjhitum, nartitum, śvetitum niṁsitum, yatitum, vijitum, syanditum, bādhitum, tanitum, yācitum, catitum, manthitum, asitum, vraścitum, krīḍitum, śayitum,* from udātta verbs considered earlier (see 133-138).

146 There are also negative rules that disallow the addition of *iṭ*. Thus, according to

A 7.2.8: **नेड् वशि कृति।** (*neḍ vaśi kṛti*)

A 7.2.10: **एकाच उपदेशेऽनुदात्तात्।** (*ekāca upadeśe'nudāttāt*)

iṭ does not occur (*na*[*bhavati*]) in a kṛt affix (*kṛti*: A 3.1.93 [66]) which begins with a voiced consonant other than *y* (*vaśi*) or in an ārdhadhātuka affix that begins with a consonant other than *y* if this follows (A 1.1.67 [90]) a verb which, when it is taught (*upadeśe*), is monosyllabic (*ekācaḥ*) and has a low-pitched base vowel (*anudāttāt*). For example, *īśa* (3sg. pres. ind. *īṣṭe*) 'have power, be able' is taught with a high-pitched base vowel, since affixes such as *tumun* are augmented with *iṭ* when they follow this verb: *īśitum*. A 7.2.35 (145) allows for the augment in such instances. This rule would also allow the augment for the suffix *varac* (A 3.2.175 [290]), but this affix lacks *iṭ* in the derivate *īśvara* 'lord'. A 7.2.8 disallows this augment for such an affix after a verb such as *īśa*. A 7.2.10 precludes adding *iṭ* to any affix which would otherwise get this augment by A 7.2.35 if the affix follows a verb of the type specified, as in *labdhum* (< ... *labh-tum*); similarly, *attum* (< *ad-tum*), *hantum, hotum* (< *hu-tum*), *bhetum* (< *bhī-tum*), *bhraṣṭum* (< ... *bhrasj-tum*), *sotum* (< *su-tum*), *nantum* (< ... *nam-tum*), *sraṣṭum* (< ... *sṛj-tum*), *roddhum* (< ... *rudh-tum*), *moktum* (< ... *muc-tum*), *gantum* (< ... *gam-tum*), from anudātta verbs considered earlier.

147 Negative rules connected with A 7.2.35 (145) also have to take into consideration the phonological shapes of verbs and

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markers of both verbs and affixes. For example, by

A 7.2.11: श्र्युकः किति। (*śryukaḥ kiti*)

A 7.2.14: श्वीदितो निष्ठायाम्। (*śvidito niṣṭhāyām*)

A 7.2.16: आदितश्च। (*āditaś ca*)

particular affixes do not take the augment *iṭ* if they follow certain verbs: an affix marked with *k* (*kiti*), if it occurs with *śríñ* 'resort to, lean on, depend on' or a verb that ends with *u ū ṛ ṝ* (*śryukaḥ*) when it is taught; an affix of the niṣṭhā class (*niṣṭhāyām*: A 1.1.26 [66]), if it occurs with *ṭuośví* 'swell' or a verb marked with *ī* (*śvīditaḥ*), as well as (*ca*) with a verb that bears the marker *ā* (*āditaḥ*). The verbs *śríñ, bhū* (see 133), *pū́ṅ* 'purify, filter', *ṭṝ* 'cross', *ṭuośvi, ṇṛtí* (see 135), *śvitā* (see 137) are recited in the dhātupāṭha with high-pitched base vowels, showing that ārdhadhātuka affixes which begin with consonants other than *y* have the initial augment *iṭ* when they follow these bases (A 7.2.35 [145]): *śrayitum, bhavitum, pavitum, taritum* (< *ṭṝ-itum*), *śvayitum, nartitum, śvetitum*; similarly, in *śvayitvā* 'after becoming white', the affix *ktvā* (A 3.4.21 [259]) has the augment *iṭ*. However, the suffix *kta* does not take this augment after these verbs: *śrita, bhūta, pūta, tīrṇa* (< ... *ṭṝ-ta*), *śūna* (< ... *śvi-ta*), *ṇṛtta, śvitta*; in addition, *śritvā, bhūtvā, pūtvā, tīrtvā* (< ... *ṭṝ-tvā*) contain unaugmented *ktvā*.

Further, the desiderative affix *san* (A 3.1.7 [279]) lacks *iṭ* after verbs with original *-u -ū -ṛ -ṝ*. As provided for by

A 7.2.12: सनि ग्रहगुहोश्च। (*sani grahaguhoś ca*)

gráha 'seize, grasp, take', *gúhū* 'hide' (*grahaguhoḥ*) as well as (*ca*) verbs with final vowels *u ū ṛ ṝ* (*uk*:*ukaḥ* understood from A 7.2.11) are contexts in which *iṭ* is not added to *san* (*sani*): *pupūṣa* (*pupūṣate*), *titīrṣa* (*titīrṣati*), derived from *pū́ṅ, ṭṝ*, and *jighṛkṣa* (*jighṛkṣati*), *jughukṣa* (*jughukṣati*) from *gráha, gúhū*.

148 Rules disallowing the augment *iṭ* for given affixes may have to take into consideration not only particular verbs but

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also other affixes, with which unaugmented suffixes are used. Thus,

A 7.2.59: न वृद्भ्यश्चतुर्भ्यः (से इट् परस्मैपदेषु) (*na vṛdbhyaś caturbhyaḥ* [*se* 57, *iṭ parasmaipadeṣu* 58])

provides that *iṭ* does not occur (*na* [*bhavati*]) as part of an affix with *s-* (*se*) following (A 1.1.67 [90]) the four (*caturbhyaḥ*) verbs that make up an ordered subgroup starting with *vṛtu* (*vṛdbhyaḥ*), if parasmaipada affixes follow (*parasmaipadeṣu*: A 1.1.66); e.g., *vartsyati, vartsyati, śartsyati, syantsyati,* in which the unaugmented suffix *sya* precedes the parasmaipada affix *tip,* as opposed to *vartiṣyate, vardhiṣyate, śardhiṣyate, syandiṣyate,* where augmented *iṣya* (< *isya*) precedes the ātmanepada suffix *te* (cf. A 1.3.92 [143]). In addition, according to

A 7.2.60: तासि च क्लृपः। (*tāsi ca kḷpaḥ*)

not only an affix with *s-* but also (*ca*) *tās* (*tāsi*: A 3.1.33 [236]) followed by parasmaipada suffixes lacks *iṭ* after *kṛpū* 'be fit': *kalpsyati, kalptā.*

149 Conversely, some verbs usually followed by unaugmented suffixes condition the addition of *iṭ* to particular affixes. For example, one has *kartum* (< *kṛ-tum*), *hartum, hantum,* and *kṛta, hṛta, hata* (< *han-ta*) from the verbs *ḍukṛñ* 'do, make', *hṛñ* take', and *hanᵃ* 'strike, kill'. Accordingly, these are taught with low-pitched base vowels (see A 7.2.10 [146]). Instead of unaugmented *sya,* however, one has augmented *iṣya* in *kariṣyati, hariṣyati, haniṣyati, akariṣyat, ahariṣyat,* and *ahaniṣyat.* Such future and conditional forms, with augmented *iṣya,* are the norm for verbs that end with short *ṛ.* Hence, in

A 7.2.70: ऋद्धनोः स्ये। (*ṛddhanoḥ sye*)

Pāṇini provides that *iṭ* occurs as part of *sya* (*sye*) used with verbs in *-ṛ* (*ṛt-*: A 1.1.70 [85]) and with *han* (*ṛddhanoḥ*).

Similarly, although *gamḷ* 'go' is generally followed by unaugmented affixes, as in *gantum, gata* (< *gam-ta*), and

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gaṁsyate 'will be understood', an ārdhadhātuka with initial *s* (*se*) receives the augment *iṭ* if it is followed by parasmaipada endings (*parasmaipadeṣu*), as in *gamiṣyati* and *agamiṣyat*. Augmenting with *iṭ* under the conditions noted is provided for in

A 7.2.58: **गमेरिट्परस्मैपदेषु (से)** (*gamer iṭ parasmaipadeṣu* [*se* 57])

150 Pāṇini must also allow for optional augmenting with *iṭ*. For example, according to

A 7.2.44: **स्वरतिसूतिसूयतिधूञूदितो वा।** (*svaratisūtisūyatidhūñūdito vā*)

iṭ optionally (*vā*: A 1.1.44 [31]) occurs under the conditions given in A 7.2.35 (145) if the ārdhadhātuka affix in question follows *svṛ* 'resound', either of two verbs *ṣūṅ* 'give birth to', the base *dhūñ* 'shake', or a verb with the marker *ū* (*ūdit*), such as *syándū, ovráścū* (see 137): *svaritum / svartum, savitum / sotum, dhavitum / dhotum, syanditum / syanttum, vraścitum / vraṣṭum*. In addition, by

A 7.2.45: **रधादिभ्यश्च।** (*radhādibhyaś ca*)

iṭ is optionally added to an ārdhadhātuka affix beginning with a consonant other than *y* also (*ca*) if this follows verbs of the ordered subset that begins with *radh* (*radhādibhyaḥ*). These verbs are *rádhá* 'be harmed, subdued, finished', *ṇáśá* 'disappear, perish', *ṭṛpá* 'be pleased, satisfied', *ḍṛpá* 'be mad, wild', *drúhá* 'wish ill to, try to hurt someone', *múhá* 'be confused, out of one's mind', *ṣnúhá* 'vomit', *ṣníhá* 'be moist, smooth, feel affection': *radhitum / raddhum, naśitum / naṁstum, tarpitum / traptum, darpitum / draptum, drohitum / drogdhum / droḍhum, mohitum / mogdhum / moḍhum, snohitum / snogdhum / snoḍhum, snehitum / snegdhum / sneḍhum*.

151 Other optional rules concern specific affixes. Thus, according to

A 7.2.41: **इट् सनि वा (वृतः)** (*iṭ sani vā* [*vṛtaḥ* 38])

iṭ optionally (*vā*) occurs with *san* after *vṝñ* 'cover, choose',

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vṛ́ṅ, vṛ́ñ 'choose', and other verbs with original *-ṛ́;* and by

A 7.2.49: **सनीवन्तर्धभ्रस्जदम्भुश्रिस्वृयूर्णुभरज्ञपिसनाम् (इट् वा)** (*sanīvantardhabhrasjadambhuśri-svṛyūrṇubharajñapisanām* [*iṭ* 47, *vā* 41])

iṭ is optionally added to *san* (*sani*) if this affix is used with verbs that end in *-iv* (*ivanta-*), such as *dívú* 'gamble', or with *ṛ́dhú* 'prosper', *bhrasjá* 'fry', *dámbhú* 'deceive', *śríñ* 'resort to, lean on, depend on', *svṛ* 'resound', *yú* 'join, mix', *ūrnuñ* 'cover', *bhṛñ* 'bear, fill', *jñapi* 'inform, let know', and *ṣáṇú, ṣánù* 'divide, give': *vivariṣati / vuvūrṣati, vivariṣate / vuvūrṣate, titariṣati / titīrṣati* (*tṛ́* 'cross, swim'), *didaviṣati / dudyūṣati, ardidhiṣati / īrtsati, bibharjiṣati / bibhrajjiṣati / bibhṛkṣati / bibharkṣati, didambhiṣati / dhipsati / dhīpsati, śiśrayiṣati / śiśrīṣati, sisvariṣati / susvūrṣati, yiyaviṣati / yuyūṣati, ūrṇunaviṣati / ūrṇunuviṣati / ūrṇunūṣati, bibhariṣati / bubhūrṣati, jijñapayiṣati / jñīpsati, sisaniṣati / siṣāsati.*

According to

A 7.2.56: **उदितो वा (क्त्वि)** (*udito vā* [*ktvi* 55])

iṭ optionally occurs with *ktvā* (*ktvi*) after a verb with the marker *u* (*uditaḥ*); e.g., *dhvaṁsitvā / dhvastvā* 'after disappearing, perishing', *tanitvā / tatvā* 'after stretching', *asitvā / aṣtvā* 'after throwing', from the verbs *dhvánsu, tánù, ású.*

152 Sūtras that provide for the optional occurrence of *iṭ* are connected with a negative rules similar to A 7.2.14 (147):

A 7.2.15: **यस्य विभाषा।** (*yasya vibhāṣā*)

This provides that the augment *iṭ* does not occur in a niṣṭhā affix following a verb with respect to which an option is provided (*yasya vibhāṣā*) in subsequent rules concerning this augment. In this connection, consider the following participles, with *kta* after verbs which are contexts for the optional occurrence of *iṭ* (see 150-151): *svṛta, sūta, dhūta, syanna* (< ... *syand-ta*), *vṛkṇa* (< ... *vrasc-ta*), *raddha* (< ... *radh-ta*), *naṣṭa* (< ... *naś-ta*), *tṛpta, dṛpta, drugdha / drūḍha* (< ... *druh-ta*), *mugdha / mūḍha* (< ... *muh-ta*), *snugdha / snūḍha*

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(< ... *snuh-ta*), *snigdha*/*snīḍha* (< ... *snih-ta*), *vṛta*, *vūrṇa* (< ... *vṝ-ta*), *tīrṇa* (< ... *tṝ-ta*), *dyūta* (< ... *div-ta*), *ṛddha*, *bhṛṣṭa* (< ... *bhrasj-ta*), *dabdha*,, *śrita*, *ūrṇuta*, *bhṛta*, *sāta* (< ... *san-ta*), *dhvasta* (< *dhvans-ta*), *tata* (< *tan-ta*), *asta*. Now, *bhrasjà* is an anudātta base, so that, by A 7.2.10 (146), the augment *iṭ* is disallowed for *kta* after this verb: *bhṛṣṭa*. In addition, A 7.2.11-12 (147) disallow *iṭ* for affixes marked with *k* and for *san* after *śríñ* and verbs with original *-u -ū -ṛ -ṝ*; so that *svṛta*, *sūta*, *dhūta*, *vṛta*, *vūrṇa*, *tīrṇa*, *śrita*, *yuta*, *ūrṇuta*, and *bhṛta* are accounted for. On the other hand, although *ṭṛpá* and *dṛpá* have low-pitched base vowels, A 7.2.45 (150) lets any ārdhadhātuka affix that begins with a consonant other than *y* optionally receive the augment *iṭ* after these verbs, and the negative rules given in 147 cannot apply to disallow this augment for *kta* used with the verbs in question. The same negative sūtras cannot disallow *iṭ* for *kta* after the consonant-final udātta bases *syándū*, *ovráścū́*, *rádhá*, *ṇáśá*, *drúhá*, *múhá*, *ṣnúhá*, *ṣníhá*, *dívú*, *ṛdhú*, *ṣáná*, *ṣánù*, *dhvánsu*, *tánù*, *ású*. Clearly, another negative rule is required. This is A 7.2.15: The sūtras considered in 150-151 let affixes optionally take the augment *iṭ* after certain verbs; niṣṭhā affixes do not take this augment after such verbs.

153 There are also instances such that the suffix *sañ* is obligatorily augmented with *iṭ*, but rules considered up to now would allow for this only optionally or not at all. Consider the desideratives *sismayiṣa* (*sismayiṣate*), *pipaviṣa* (*pipaviṣate*), *aririṣa* (*aririṣati*), *añjijiṣa* (*añjijiṣati*), *aśiśiṣa* (*aśiśiṣate*), *cikariṣa* (*cikariṣati*), *jigariṣa* (*jigariṣati*), *didariṣa* (*ā didariṣate*, with the preverb *ā*), *didhariṣa* (*didhariṣate*), and *pipracchiṣa* (*pipracchiṣati*), derived from *smiṅ* 'smile', *pūṅ* 'purify', *ṛ* 'go, reach', *ánjū́* 'smear, anoint', *áśū* 'reach, encompass, pervade', *kṝ* 'strew', *gṝ* 'swallow', *dṛṅ* 'consider, respect', *dhṛṅ* 'subsist', and *pracháṅ* 'ask'. All these derivates have the augmented suffix *iṣa*. However, by A 7.2.10 (146), *san* would remain unaugmented after anudātta bases such as *smiṅ* (*smetum*, *smita*), *dṛṅ* (*ādartum*, *ādṛta*),

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and *prachá* (*praṣṭum, pṛṣṭa*); by A 7.2.12 (147), *san* would not have *iṭ* after a verb such as *pūṅ*; according to A 7.2.44 (150), *iṭ* would be added only optionally to a suffix after a verb marked with *ū*, such as *áṅjū́* (*añjitum, aṅktum*), *áśū* (*aśitum, aṣṭum*); and according to A 7.2.41 (151), after the verbs *kṝ́* and *gṝ́*, the affix *san* would only optionally be augmented with *iṭ* Therefore, in

A 7.2.74: स्मिपूङ्रञ्ज्वशां सनि (इट्)

(*smipūṅrañjvaśāṁ sani* [*iṭ* 58])

A 7.2.75: किरश्च पञ्चभ्यः। (*kiraś ca pañcabhyaḥ*)

Pāṇini specifically provides that *iṭ* occurs with *san* (*sani*) when this suffix follows *smiṅ, pūṅ, ṛ, áṅjū́, áśū* as well as (*ca*) the five (*pañcabhyaḥ*) verbs of the subgroup that begins with *kṝ́* (*kiraḥ*). After these verbs, *san* thereby takes the augment *iṭ* obligatorily.

Remark.

154 As I pointed out earlier (see 86, 116), the nasal pronunciation of vowel markers and the svarita marking of adhikāras was lost in the Pāṇinian tradition. Similarly, the distinctive accentuations of base vowels and markers are not retained in the dhātupāṭha as handed down by commentators like Kṣīrasvāmin, Maitreya, and Sāyaṇa, although Kṣīrasvāmin does say that the marker *a* of *ḍupacáṣ* is nasalized (*sānunāsiko'kāraḥ*) and that the nasal pronunciation of this vowel serves to illustrate the pronunciation of other markers (KṣT I.724 [p. 157]: सानुनासिकोऽकारःसर्वेषामुपलक्षणार्थम्). The texts transmitted by these commentators include statements that given groups of verbs are udātta (*seṭ*) or anudātta (*aniṭ*) and that specified sets of verbs have high-pitched, low-pitched, or svarita vowel markers (*udāttet, anudāttet, svaritet*) and are thereby among those verbs that have agentive forms with parasmaipada affixes (*parasmaipadin,*

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parasmaibhāṣa), ātmanepada affixes (*ātmanepadin, ātmanebhāṣa*), or both (*ubhayapadin, ubhayatobhāṣa*). For example, after giving *édha* with its gloss, Kṣīrasvāmin says that the thirty-five verbs from here on, through *káttha* 'praise', have high-pitched base vowels and low-pitched markers. He then notes that, since the *e* of *édha* is high-pitched, this verb is seṭ, and that, in accordance with A 1.3.12 (138), the verb is ātmanepadin, since its *a* is low-pitched. Later, after giving *káttha* with its gloss, Kṣīrasvmāmin closes the subsection in question with a statement that the verbs of this group have high-pitched base vowels and low-pitched markers. [KṣT 1.3 (p. 11): **इतः कत्थान्ताः पञ्चत्रिंशदुदात्ता अनुदात्तेतश्च। तेनायम् एकारस्योदात्तत्वात्सेट् अकारस्य चानुदात्तत्वादनुदात्तङित आत्मनेपदमित्यात्मनेपदी।**, 1.32 (p. 21): **उदात्ता अनुदात्तेतः।**] According to Maitreya, *parasmaibhāṣa, ātmanebhāṣa,* and *ubhayatobhāṣa* are terms of early teachers (*pūrvācārya*), equivalent to *parasmaipadin, ātmanepadin, ubhayapadin.* [E.g., DhPr. 1.1 (p. 8): **परस्मैभाष इति परस्मैपदिनः पूर्वाचार्यसंज्ञा।**, 1.36 (p. 11): **आत्मनेभाषेत्यात्मनेपदिनां पूर्वाचार्यसंज्ञेयम्।**].

1.3.2. Groups and subgroups of verbs in the dhātupāṭha.

155 The verbs of Pāṇini's dhātupāṭha are arranged in ten major groups (*gaṇa*), the first items of which are as follows:
I. *bhū́* 'be, become' II. *adá* 'eat' III. *hu* 'offer oblations' IV. *dívú* 'gamble' V. *ṣuñ* 'press juice out of something' VI. *tudà* 'shove, goad, wound' VII. *rudhir* 'hold in, oppress, besiege' VIII. *tánù* 'stretch' IX. *ḍukrīñ* 'buy' X. *cura* 'steal'

156 Verbs of different major groups can have similar markers and similarly accented base vowels serving purposes such as those noted in Section 1.3.1. For example, *adá* and *dívú* are both parasmaipadin verbs (see 154 for the term), so that both

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are marked with high-pitched vowels (A 1.3.78 [142]). *ṣuñ, tudà, rudhìr, tánù*, and *ḍukrīñ* are ubhayapadin verbs, so that they are marked with svarita vowels or *ñ* (A 1.3.72 [139]). *bhū́, divú, tánù* are seṭ verbs, but *adá, hu, ṣuñ, tudà, rudhìr*, and *ḍukrīñ* are aniṭ verbs, so that the former are taught with high-pitched base vowels, the latter with low-pitched base vowels (A 7.2.35,10 [145-146]). Both *divú* and *tanù* are followed by unaugmented *-tvā* or augmented *-itvā* (*dyūtvā / dyotitvā, tatvā / tanitvā*), so that both are marked with *u* (A 7.2.56 [151]).

Further, as provided for in

A 3.1.67: **सार्वधातुके यक् (भावकर्मणोः धातोः)**

(*sārvadhātuke yak* [*bhāvakarmaṇoḥ* 66, *dhātoḥ* 22])

the affix (A 3.1.1 [15]) *yak* follows (A 3.1.2) any verb (*dhātoḥ*) that occurs with a sārvadhātuka suffix (*sārvadhātuke* : A 3.4.113 [63]) which has been introduced on condition that an act or an object is to be signified (*bhāvakarmaṇoḥ*: A 3.4.69 [232]), as in *ās-ya-te, kri-ya-te* (< *kṛ-ya-te*) of (9)-(10) (138).

157 Nevertheless, distinct operations characterize the ten major groups of verbs. Consider, for example, the third singular indicative active present forms of the verbs given in 155: *bhávati, átti, júhoti, dívyati, sunóti, tudáti, ruṇáddhi, tanóti, krīṇā́ti, coráyati*. These differ in respect of elements that directly follow the bases. Some forms are of the type V-A-E, with an affix between the verb and the ending. *bháv-a-ti* (< ... *bhū́-a-ti*) has a low-pitched suffix *a* (*śap*: A 3.1.4 [592]) after the verb *bhū́*, the vowel of which is high-pitched (A 6.1.162), but in *tud-á-ti* the base *tud* is followed by a high-pitched suffix *á* (A 3.1.3). *dív-ya-ti* (< *dív-ya-ti*) includes the suffix *ya* (*śyan*), with a low-pitched vowel (A 6.1.197 [600]), but *su-nó-ti* (< ... *su-nú-ti*), *tan-ó-ti* (< *tan-ú-ti*), and *krī-ṇā́-ti* (<*krī-nā́-ti*) have suffixes with high-pitched vowels. In addition, *ruṇáddhi* (< ... *ru-ná-dh-ti* < *rúdh-ti*) contains the infix *-ná-* (*śnam*). *cor-áy-a-ti* (< ...

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cor-i-a-ti) has two suffixes in addition to the ending *tip*: *cor-i* (< *cur-i*) contains the affix *ṇic* and is followed by *śap*. Other forms have no affix except the ending. Clearly, *átti* (< *ád-ti*) consists simply of the verb *ád* and the ending *tip*. In *júhoti*, an iterated base precedes this ending.

To account for such forms, Pāṇini provides that affixes are introduced to verbs when these occur with sārvadhātuka affixes (A 3.4.113 [63]) signifying agents. Of the affixation rules in question, the most general is

A 3.1.68: **कर्तरि शप् (सार्वधातुके धातोः)** (*kartari śap* [*sārvadhātuke* 67, *dhātoḥ* 22])

which simply provides that if a verb occurs with a sārvadhātuka affix (*sārvadhātuke*) signifying an agent (*kartari*), the suffix *śap* follows that verb. Other sūtras, exceptions to A 3.1.68, introduce other affixes to particular verbs under the same condition. The following are such rules:

A 3.1.69: **दिवादिभ्यः श्यन्।** (*divādibhyaḥ śyan*)

A 3.1.73: **स्वादिभ्यः श्नुः।** (*svādibhyaḥ śnuḥ*)

A 3.1.77: **तुदादिभ्यः शः।** (*tudādibhyaḥ śaḥ*)

A 3.1.78: **रुधादिभ्यः श्नम्।** (*rudhādibhyaḥ śnam*)

A 3.1.79: **तनादिकृञ्भ्य उः।** (*tanādikṛñbhya uḥ*)

A 3.1.81: **क्र्यादिभ्यः श्ना।** (*kryādibhyaḥ śnā*)

According to these sūtras, the affixes *śyan, śnu, śnam, u,* and *śnā* occur with verbs of major groups as follows:

A 3.1.69: *śyan*: the set beginning with *div* (*divādibhyaḥ*)
A 3.1.73: *śnu*: the set beginning with *su* (*svādibhyaḥ*)
A 3.1.77: *śa*: the set beginning with *tud* (*tudādibhyaḥ*)
A 3.1.78: *śnam*: the set beginning with *rudh* (*rudhādibhyaḥ*)
A 3.1.79: *u*: the set beginning with *tan,* including also *kṛñ* (*tanādikṛñbhyaḥ*)
A 3.1.81: *śnā*: the set beginning with *krī* (*kryādibhyaḥ*)

These sūtras are part of the section headed by A 3.1.1 (15),

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so that the elements introduced have the class name *pratyaya*: they are affixes. By A 3.1.2, such elements generally follow items to which they are introduced, items denoted by ablative forms such as *divādibhyaḥ*, construed with *paraḥ*. However, an affix marked with *m* follows the last vowel of the item to which it is introduced (A 1.1.47 [16]). Thus, *śap, śyan, śnu, śa, u,* and *śnā* are suffixes, but *śnam* is an infix. In addition, the affixes marked with *ś* belong to the sārvadhātuka class, but *u* is a member of the ārdhadhātuka class (A 3.4.113-114 [63]).

158 After groups of verbs covered by sūtras such as A 3.1.69-81 (157) have been extracted, one is left with three major sets of verbs to which *śap* is directly introduced, by A 3.1.68: verbs of the groups that begin with *bhū, adá,* and *hu* (I-III [155]). However, according to

A 2.4.72: अदिप्रभृतिभ्यः शपः (लुक्) (*adiprabhṛtibhyaḥ śapaḥ* [*luk* 58])

A 2.4.73: बहुलं छन्दसि। (*bahulaṁ chandasi*)

A 2.4.75: जुहोत्यादिभ्यः श्लुः। (*juhotyādibhyaḥ śluḥ*)

A 2.4.76: बहुलं छन्दसि।

śap is replaced (*śapaḥ* [*sthāne*]: A 1.1.49 [90]) by zero (*luk*, *śluḥ*: A 1.1.61 [79]) after (A 1.1.67 [90]) verbs of the sets that begin with *ad* (*adiprabhṛtibhyaḥ*) and *hu* (*juhotyādibhyaḥ*), though this applies only variously (*bahulam*) in Vedic (*chandasi*). Once *śap* has been dropped after verbs of the group that starts with *hu*, moreover, doubling applies to these bases (A 6.1.10 [382]). Verbs of the group beginning with *cura* have a particular status in that the suffix *ṇic* (A 3.1.25 [281]) unconditionally follows them to form derived verbs (A 3.1.32 [47]) of the type *cor-i* (< *cur-i*: A 7.3.86 [127]), after which *śap* is introduced by A 3.1.68 (157).

159 Major groups of verbs in the dhātupāṭha include subgroups (*antargaṇa*) connected with certain operations. One subset may overlap with or be included in another. These subgroups are shown below, according to their first members and the

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major groups to which they belong.

160 I. Subgroups in the major group beginning with *bhū*:

dyúta 'shine, be bright': Verbs of this subgroup optionally have parasmaipada endings as replacements for *luṅ* (A 1.3.91 [143]), and these endings are preceded by the suffix *aṅ* (A 3.1.55 [236]): *adyutat / adyotiṣṭa*.

vṛ́tu 'occur, be': This set is included in the group that begins with *dyúta*, but its members also optionally have future, conditional, and desiderative forms with parasmaipada affixes (A 1.3.92 [143]). Moreover, the augment *iṭ* is not added to an ārdhadhātuka affix in *s*- after these verbs if it is followed by parasmaipada suffixes (A 7.2.59-60 [148]): *avṛtat / avartiṣṭa*, *vartsyati / vartiṣyate*.

gháṭa 'strive, be busy, happen': There are two subgroups beginning with this verb. The longer set consists of verbs treated as marked with *m* (*mitaḥ*: see 189b); the shorter subset, which ends with *ñitvárā* 'hasten, rush', consists of verbs that are also treated as marked with *ṣ* (*ṣitaḥ*: see 189a). Before the suffix *ṇic*, the penultimate vowel of a base marked with *m* is replaced by a short vowel (A 6.4.92 [188]), as in the causatives *ghaṭi* (< *ghāṭ-i*: *ghaṭayati*), *tvari* (*tvarayati*). Verbs marked with *ṣ* form feminine action nouns with the suffix *aṅ* (A 3.3.104 [291]) of the type *ghaṭā*, *tvarā*.

pháṇá 'move about, run': There are seven verbs in this group: *pháṇā*; *rā̀jṛ̀*, *bhrā̀jṛ*, *ḍubhrā̀śṛ*, *ḍubhlā̀śṛ* 'shine'; *syámū*, *svánā* 'sound'. These verbs optionally have perfect forms with no abhyāsa syllable (A 6.1.4 [52]) and a base vowel *e* instead of *a* or *ā* (A 6.4.125 [458]), of the types *paphaṇatuḥ / pheṇatuḥ* (3du. act.), *rarāje / reje* (3sg. mid.).

jválā 'burn, flame': Verbs in this subgroup, which ends with *kásā* 'move, open, develop', optionally form derivates of the type *jvāla* 'flaming', with the agentive affix *ṇa* (A 3.1.140 [290]).

yajā 'worship, perform a rite, sacrifice': This subset ends with *ṭuośvi* 'swell', the last verb in the first major group. Verbs of this subgroup undergo samprasāraṇa substitution (A

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1.1.45 [38]) before suffixes marked with *k* (A 6.1.15 [388]); e.g., *iṣṭa* (< ... *yaj-ta*), *śūna* (< ... *śvi-ta* [see 147]), with the participial suffix *kta*; see 170 (I.G).

161 II. Subgroups in the major group beginning with *adá*.

rúdir 'cry, weep': This set includes four other verbs: *ñiṣvapá* 'sleep', *śvásá* 'breath, sigh', *aná* 'breath', *jákṣá* 'eat, laugh'. Verbs of this group are followed by augmented sārvadhātuka endings, as in *roditi, svapiti, śvasiti, aniti, jakṣiti,* with the augmented ending *iti;* in addition, *t* and *s* receive the initial augment *iṭ* or *aṭ* after them, as in *arodīt / arodat, arodīḥ / arodaḥ* (A 7.2.76, 7.3.98-99 [440]).

ñiṣvapá: This subgroup ends with *hnuñ* 'hide, deny', the last verb of the second major group. Forms such as *svápanti / svapánti,* where these verbs are followed by vowel-initial endings the first vowel of which is not the augment *iṭ,* optionally have high-pitched base vowels (A 6.1.188 [594]). As can be seen, four verbs of this subgroup also belong to the set that begins with *rúdir*.

jákṣá: Verbs of this subgroup, included in the set that begins with *ñiṣvapá,* belong to the abhyasta class (A 6.1.6 [52]).

162 III. Subgroups in the major group beginning with *hu*.

ḍubhṛñ 'maintain, nurture': Two other verbs belong to this subgroup: *māñ* 'measure, bellow' and *ohāñ* 'go'. The abhyāsa syllable (A 6.1.4 [52]) gotten by doubling for these verbs in forms where *śap* is deleted (A 2.4.75 [158]) has the vowel *i* (A 7.4.76 [385]): *bibharti, mimīte, jihīte*.

ṇijir 'wash': This subset has two additional members: *vijir* 'separate' and *viṣḷ* 'surround'. In forms where *śap* is introduced then deleted, the abhyāsa syllable gotten by doubling for these verbs has the guṇa vowel *e* (A 7.4.75 [385]): *nenekti / nenikte, vevekti / vevikte, veveṣṭi / veviṣṭe*.

163 IV. Subgroups in the major group beginning with *dívú*.

ṣūñ 'give birth to': Verbs of this subgroup (see 173 [IV.B.2a]) are treated as marked with *o* (*oditaḥ*: see 189c), so that the *t*-of *kta* and *ktavatu* following them is replaced by *n*-(A 8.2.45 [549]): *sūna, sūnavat*.

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puṣá 'flourish, prosper, thrive, nourish': This set ends with *gṛdhú* 'desire, be greedy', the last verb of the fourth major group. After verbs of this subgroup, *añ* precedes parasmaipada endings that derive from *luṅ* (A 3.1.55 [236]): *apuṣat, agṛdhat* (3sg. aor.).

rádhá 'be harmed, subdued, finished': This is part of the set beginning with *puṣá*. An ārdhadhātuka affix beginning with a consonant other than *y* optionally has the augment *iṭ* after verbs of this subgroup (A 7.2.45 [150]): *radhitum / raddhum*.

śámú 'become calm, peaceful': This subset, also included in the one that begins with *puṣá*, has seven other members: *támú* 'be anxious, exhausted', *dámú* 'become tame', *śrámú* 'get tired', *bhrámú* 'wander about, err', *kṣámṻṣ* 'tolerate', *klámú* 'become tired, faint', *mádí* 'be glad, exhilerated'. When followed by *śyan* (A 3.1.69 [157]), these verbs have long base vowels (A 7.3.74 [424]): *śāmyati, tāmyati, dāmyati, śrāmyati, bhrāmyati, kṣāmyati, klāmyati, mādyati*. In addition, these verbs form agentive derivates with *ghinuṇ* (A 3.2.141 [290]) of the type *śamin*.

164 VI. Subgroups in the major group beginning with *tudá*.

kúṭá 'bend, curve': After verbs of this set (see 175 [VI.B]). an affix not marked with *ñ* or *ṇ* is treated as marked with *ṅ* (A 1.2.1 [513]), so that it does not condition guṇa or vṛddhi substitution in a preceding stem (A 1.1.5 [98]). For example, *kuṭitum* has *kuṭ*- followed by *itum*, but, as can be seen from examples like *tottum* (< ... *tud-tum*), *joṣitum* (< *juṣ-itum*), the affix *tumun*, whether simple or augmented with *iṭ*, generally conditions guṇa substitution for penultimate *i u ṛ ḷ* of a stem (A 7.3.86 [127]).

kṝ 'strew': After the five verbs of this subset, *iṭ* is obligatorily added to the desiderative affix *san* (A 7.2.75 [153]).

mucḷ 'release': This subgroup (see 175 [VI.F]) ends with *píśá* 'carve, form', the last verb of the sixth major group. When followed by *śa* (A 3.1.77 [157]), these verbs take the augment *num* (A 7.1.59 [439]): *muñcati* (< ... *munc-a-ti*),

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piṁśati.

165 IX. Subgroups in the major group beginning with *ḍukrīñ*.

pūṅ 'purify': Final vowels of verbs in this subset (see 178 [IX. B]) are replaced by short vowels before an affix marked with *ś* (A 7.3.80 [424]), as in *punāti* (< *pū-nā-ti*), with the suffix *śnā* (A 3.1.81 [157]).

lūñ 'cut': This subgroup consists of the verbs in the last-mentioned set except for *pūṅ*. After verbs of this group, the *t*- of *kta* and *ktavatu* is replaced by *n*- (A 8.2.44 [549]), as in *lūna* 'cut', *lūnavat* 'one who has cut something'; contrast *krīta, krītavat, pūta, pūtavat*.

166 X. Subgroups in the major group beginning with *cura*.

jñapa 'inform, please, sharpen, kill': Verbs of this set are treated as marked with *m* (*mitaḥ*: see 200), so that their penultimate vowels are replaced by short vowels before *ṇic* (A 6.4.92 [188]): *jñapi* (< *jñāp-i*).

cita 'perceive, understand': Verbs of this subgroup are used with ātmanepada affixes only. As I have pointed out (158), *ṇic* is unconditionally added to bases of the tenth group, and derived verbs with this suffix take ātmanepada affixes signifying agents if the results of the acts in question are intended for their agents (A 1.3.74 [139]). This is only the general situation, however. Derived verbs formed from the bases of the present subgroup simply take ātmanepada affixes (see 192a), without this condition having to be met: *cetayate*.

yuja 'join, connect, yoke': Contrary to what obtains for verbs of the tenth major group in general, after bases of this subgroup, *ṇic* is introduced only optionally (see 192b), so that verbal affixes, including *śap* (A 3.1.68 [157]), alternately occur with derived verbs in *-ṇic* formed from bases of this set or with these bases alone. For example, one has *yojayati, yojati* from *yuja* of the subset under consideration, as also *yunakti* from *yujir* of the seventh major group; similarly, *dhṛṣa* 'be bold, daring' is included in the present subgroup (*dharṣayati, dharṣati*).

katha 'tell, relate': Verbs of this subgroup, which extends

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to the end of the tenth major group, end in *-a*. This vowel is deleted when a base precedes an ārdhadhātuka suffix (A 6.4.48 [450]): *katha-i* > *kath-i* (*kathayati*), *sūca-i* > *sūc-i* (*sūcayati* 'points out [faults]'), *spṛha-i* > *spṛh-i* (*spṛhayati* 'desires, yearns for'), with *-a* dropped before the ārdhadhātuka suffix *ṇic*. By A 1.1.57 (101), the zero replacement for *-a* has the status of the original vowel with respect to an operation on what preceded that vowel, so that the penultimate *a* of *kath-* in *kath-i* is not subject to replacement by the *vṛddhi* vowel *ā* (see 101); nor are the *ū* of *sūc-* and the *ṛ* of *spṛh-* in *sūc-i*, *spṛh-i* subject to replacement by guṇa vowels (A 7.3.86 [127]).

pada 'go': Verbs of this set, included in the subgroup that begins with *katha*, form derivates in *-ṇic* that take only ātmanepada affixes: *padayate*. In this respect, these verbs are similar to those of the group that begins with *cita* (*cetayate*). However, the two groups differ in an important respect. As shown, the final vowel of *cita* is a marker (*it*: A 1.3.2 [80]), so that it is unconditionally deleted (A 1.3.9 [81]), leaving *cit*, to which *ṇic* is affixed. The penultimate vowel of *cit-* in *cit-i* is then replaced by the guṇa vowel *e* according to A 7.3.86 (127). The marker of *śama* 'look at, see' also is unconditionally dropped, and the penultimate *a* of *śam-* in *śam-i* is then replaced by the vṛddhi vowel *ā* (A 7.2.116 [417]): *śām-i* (*ni śāmayate*). The *-a* of *pada*, on the other hand, is not a marker, so that it is not dropped unconditionally. It is deleted before *ṇic*, so that, by A 1.1.57, vṛddhi substitution in *pad-* is precluded.

167 As shown, the final vowels of *cura*, *cita*, *yuja*, *dhṛṣa*, *śama* are markers. However, they are not markers accented in a manner to show that a verb is parasmaipadin, ātmanepadin, or ubhayapadin. For the use of ātmanepada and parasmaipada affixes with derived verbs containing *ṇic* is covered in general by A 1.3.74, 78 (139, 142), and such verbs of the tenth major group as form derivates with *ṇic* that take only ātmanepada affixes are put in special subgroups, beginning with *cita* and *pada* (166). On the other hand, if *cur*, *cit*, *yuj*,

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dhṛṣ, *śam*, and others were given in the dhātupāṭha without the vowel markers shown, their final consonants would be classed as *it*, hence deleted (A 1.3.3, 9 [80-81]). These vowel markers thus serve to cover the final consonants of verbs, leaving *cur* and so on after they have been deleted. The final vowels of *katha* and others of the subgroup beginning with this verb, however, are not nasalized markers. In the dhātupāṭha versions handed down by commentators, Kṣīrasvāmin and others explicitly provide that verbs of the group starting with *katha* end in *-a* (*adantāḥ*: KṣT X.240 (p. 310): **अदन्ताः। इत आ गणान्तादित्संज्ञानिषेधार्थमदन्तत्वं विधीयते।**; cf. DhPr. p. 147 (immediately following X.293), MDhV X.243 (p. 567), SK 3.403).

168 Verbs are distributed among the major groups and subgroups of the dhātupāṭha according to operations connected with them (see 157-167). Accordingly, Pāṇini recognizes homophonous bases. Some such verbs clearly differ in meaning. For example, *vídá* 'know' belongs to the second major group (*vétti* / *véda*), *vida* 'be, occur' to the fourth major group (*vidyate*, with a high-pitched base vowel), and *vidḷ̀* 'find' is included in the sixth major group, within the subgroup that begins with *mucḷ̀* (*vindáti, vindáte*, pass. *vidyáte*). Other homophonous bases, however, do not differ in this way. For example, *puṣá* (IV: *púṣyati*, see 163) and *púṣá* (IX: *puṣṇáti*) are patently related in meaning --- indeed commentators gloss them identically (e.g., KṣT IV.73, IX.60: *puṣṭau*) --- although *púṣyati* 'thrives' and *puṣṇáti* 'makes to thrive, nourishes' can contrast. Still other homophonous verbs, on the other hand, do not differ semantically even to this possible extent; for example: *kṛṣá* (I: *kárṣati*), *kṛṣá* (VI: *kṛṣáti, kṛṣáte*) 'draw, plow'; *dāṇ* (I: *yácchati* [A 7.3.78 (437)], *ḍudāñ* (III: *dádāti, dátte*) 'give'; *mana* (IV: *mányate*), *mánu* (VIII: *manuté*) 'think, consider'; *ñimidā* (I: *médate*), *ñimidā́* (IV: *médyati*) 'become moist'.

169 Within each major group of the dhātupāṭha (see 155), verbs in general are arranged according to three criteria: They are

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ātmanepadin, parasmaipadin, or ubhayapadin (137-143, 154); they are udātta or anudātta (144-154); they have final sounds in common. However, membership in subgroups associated with particular operations (159-166) takes precedence over these general criteria. The overall organization of the major groups in the dhātupāṭha is shown below.

170 1. First major group (*bhvādigaṇa*).

A. Udātta verbs that are either parasmaipadin or ātmanepadin.

1. *bhū́* (*bhávati*) 'be, become'

2. Bases ending in consonants, arranged according to their particular final sounds, beginning with *édha* (*édhate*) 'thrive' and others with final dental stops. There follow bases that end in nonnasal velar, palatal, retroflex, and labial stops, then those ending in nasals, semivowels, and spirants. Within each of these sets, ātmanepadin verbs are given first, then parasmaipadin verbs. In addition, the single udātta ubhayapadin base of the first major group that ends in a semivowel is included here: *dhā́vū* (*dhā́vati, dhā́vate*) 'wash'.

B. The special subgroups that begin with *dyúta, vṛ́tu, ghāṭa, pháṇá,* and *jválá* (see 160). These sets resemble A.2 in that most of the verbs in question are udātta and either ātmanepadin or parasmaipadin, but this is not always so. Thus, although *rā́jṝ* is ubhayapadin, it has forms of the type found for the subgroup beginning with *pháṇá,* so that it is included in this group. For systematic reasons also, the subgroup beginning with *jválá* contains anudātta verbs: *ṣadḹ* (*sī́dati*: A 7.3.78 [437]) 'sit down, sink, become languid', *śadḹ* (*śīyate*: A 7.3.78) 'fall, disappear, perish', *kruśá* (*króśati*) 'call, cry', *ruhá* (*róhati*) 'climb, mount, sprout'.

C. Udātta ubhayapadin verbs.

1. Consonant-final bases, starting with *hikkā* (*hikkati, hikkate*) 'hiccough' and others that end in velar stops. There follow bases with final palatal, retroflex, and dental stops, after which come those that end in nasals, semivowels, and spirants.

2. The vowel-final base *śriñ* (*śráyati, śráyate*) 'resort

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to, lean on, depend on.'

D. Vowel-final anudātta bases.

1. Ubhayapadin verbs, starting with *hṛñ* (*hárati, hárate*) 'take'.

2. Parasmaipadin verbs, beginning with *dheṭ* (*dhấyati*) 'suck'.

3. Ātmanepadin verbs, starting with *smiṅ* (*smấyate*) 'smile'.

C and D.1 make up a group of ubhayapadin verbs.

E. Vowel-final udātta bases.

1. Ātmanepadin verbs, beginning with *pūṅ* (*pávate*) 'purify, become purified'

2. The parasmaipadin verb *tṝ* (*tárati*) 'cross, swim'.

C.2-E.2 make up a group of vocalic bases.

F. Consonant-final bases, anudātta except for *ñikṣvidā́*.

1. Ātmanepadin verbs, starting with *gupa* (*júgupsate*) 'be disgusted'

2. Parasmaipadin verbs, beginning with *ñikṣvidā́* 'hum', *skandír* (*skándati*) 'jump, fall'

3. Ubhayapadin verbs, starting with *dānà* (*dídāṁsati, dídāṁsate*) 'cut'

G. The special subgroup that begins with *yajà* (see 160).

1. Anudātta verbs:

a. Consonant-final bases: Ubhayapadin verbs: *yajà* (*yájati, yájate*), *ḍuvapà* (*vápati, vápate*) 'strew, sow', *vahà* (*váhati, váhate*) 'transport'; the parasmaipadin verb *vasá* (*vásati*) 'dwell, remain'

b. Vowel-final bases, all ubhayapadin: *veñ* (*váyati, váyate*) 'weave', *vyeñ* (*vyáyati, vyáyate*) 'cover', *hveñ* (*hváyati, hváyate*) 'call, challenge'

2. Udātta verbs: *vádá* (*vádati*) 'say', *ṭuośví* (*śváyati*) 'swell'

171 II. Second major group (*adādigaṇa*).

A. Consonant-final bases.

1. Anudātta verbs.

a. The parasmaipadin verbs *adá* (*átti*) 'eat' and *haná* (*hánti*)

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'strike, kill'

b. Ubhayapadin verbs, starting with *dviṣa* (*dvéṣṭi, dviṣṭé*) 'hate'

c. The ātmanepadin verb *cakṣiṅ* (*ā́ caṣṭe*) 'say, call'

2. Udātta ātmanepadin verbs, beginning with *ír* (*írte*) 'move, go'

B. Vowel-final bases.

1. Udātta verbs.

a. The ātmanepadin verbs *ṣūṅ* (*sū́te*) 'give birth to' and *śīṅ* (*śéte*) 'lie, sleep'

b. Parasmaipadin verbs, beginning with *yú* (*yaúti*) 'unite, mix'

2. Anudātta verbs, arranged according to their vowels:

-u -ū: from *dyu* (*dyaúti*) 'go, advance towards' to *brūñ* (*brávīti, brūté*) 'say, speak'

-i -ī: from *iṇ* (*éti*) 'go' to *vī* (*véti*) 'go towards, seek, conceive'

-ā: from *yā* (*yā́ti*) 'go, reach, travel' to *mā* (*mā́ti*) 'measure

A.2 and B.1a make up a group of udātta ātmanepadin verbs.

C. Consonant-final bases.

1. The anudātta parasmaipadin verb *vacá* (*vákti*) 'say, speak'

2. Udātta parasmaipadin verbs, from *vidá* (*vétti / véda*) 'know' to *rúdir* (*róditi*) 'cry, weep'

D. The special subgroups that begin with *rúdir, ñiṣvapá,* and *jákṣā* (see 161).

172 III. Third major group (*juhotyādigaṇa*).

A. Vowel-final bases.

1. Parasmaipadin verbs.

a. The anudātta verbs *hu* (*júhoti*), *ñibhī* (*bíbheti*) 'be afraid', *hrī* (*jíhreti*) 'be ashamed'

b. The udātta verb *pṛ́* (*píparti*) 'nurture, fill'

2. The special subgroup consisting of *ḍubhṛñ, māṅ,* and *ohāṅ* (see 162).

3. Other anudātta verbs in *-ā*: *ohāk* (*jáhāti*) 'abandon', *ḍudāñ* (*dádāti, datté*), *ḍudhāñ* (*dádhāti, dhatté*) 'place, make.'

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B. The special subgroup that begins with *ṇijir* (see 162).

C. A group of verbs, starting with *ghṛ* 'pour on', that generally have forms of the type *jigharti* in Vedic usage (*chandasi*, see 612).

173 IV. Fourth major group (*divādigaṇa*).

A. Consonant-final parasmaipadin verbs, starting with *dívú* (*dívyati*) 'gamble'; all but *kṣipá* (*kṣípyati*) 'throw' are udātta verbs

B. Vowel-final bases.

1. The parasmaipadin verbs *jṝṣ*, *jhṝṣ* (*jíryati, jhíryati*) 'age, decay'

2. Ātmanepadin verbs.

a. The special subgroup that begins with *ṣúñ* (see 163), bases being arranged according to their final vowels:

-ū: *ṣúñ* (*súyate*) 'give birth to', *dúñ* (*dúyate*) 'suffer pain'

-ī: *dīñ* (*díyate*) 'perish', *ḍīñ* (*ḍíyate*) 'fly', *dhīñ* (*dhíyate*) 'support', *mīñ* (*míyate*) 'suffer harm, perish', *rīñ* (*ríyate*) 'flow', *līñ* (*líyate*) 'become attached', *vrīñ* (*vríyate*) 'choose'

b. Other anudātta bases in *-i*, from *pīñ* (*píyate*) 'drink' to *prīñ* (*príyate*) 'be pleased, like'

3. Parasmaipadin anudātta bases in *-o* : *śo* (*śyáti*) 'sharpen', *cho* (*chyáti*) 'cut', *ṣo* (*syáti*) 'end, finish, terminate', *do* (*dyáti*) 'bind, cut'

C. Consonant-final bases.

1. Udātta verbs.

a. Ātmanepadin verbs, from *jánī* (*jāyate*) 'be born' to *vāśṛ* (*vāśyate*) 'roar, bleat'

b. The ubhayapadin verbs *mṛṣà* (*mṛ́ṣyati, mṛ́ṣyate*) 'tolerate', *śúcir* (*śúcyati, śúcyate*) 'be pained'

2. Anudātta verbs.

a. Ubhayapadin verbs: *ṇahà* (*náhyati, náhyate*) 'gird, bind', *ranjà* (*rájyati, rájyate*) 'be colored, have passion', *śapà* (*śápyati, śápyate*) 'swear, curse, blame'

b. Ātmanepadin verbs, starting with *pada* (*pádyate*) 'go, reach, understand'

D. The special subgroups that begin with *puṣá, rádhá,* and

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śámū (see 163).

174 V. Fifth major group (*svādigaṇa*).

A. Vowel-final bases.

1. Ubhayapadin verbs, starting with *ṣuñ* (*sunóti, sunuté*) 'press juice out of something'

2. Parasmaipadin verbs, beginning with *ṭudu* (*dunóti*) 'cause pain'

All the verbs in question, excepting *vṛñ* (*vṛṇóti, vṛṇuté*) 'cover, choose' and *dhūñ* (*dhūnóti, dhūnuté*) 'shake', are anudātta.

B. Consonant-final bases.

1. Anudātta parasmaipadin verbs, starting with *āpḷ'* (*āpnóti*) 'reach, obtain, encompass'

2. Udātta verbs.

a. The ātmanepadin verbs *áśū* (*aśnuté*) 'reach, encompass' and *ṣṭigha* (*stighnuté*) 'attack'

b. Parasmaipadin verbs, from *tíkā* (*tiknóti*) 'attack' to *cámū* (*ā́ camnoti*) 'sip'

C. A set of verbs, starting with *áhā* 'encompass', that have forms of the type *ahnóti* in Vedic usage (*chandasi*). This group includes *dágha* 'kill, protect' and *cámū* of B.2b.

175 VI. Sixth major group (*tudādigaṇa*).

A. Consonant-final bases.

1. Anudātta ubhayapadin verbs, from *tudā* (*tudáti, tudáte*) 'shove, goad, wound' to *kṛṣā* (*kṛṣáti, kṛṣáte*) 'draw, plough'

2. Udātta verbs.

a. The parasmaipadin verb *ṛ́ṣī* (*ṛṣáti*) 'push'

b. The ātmanepadin verbs *júṣī* (*juṣáte*) 'take pleasure in, enjoy', *ovíjī* (*úd vijate*) 'fear, tremble', *olájī, olásjī* (*lajáte, lajjáte*) 'be ashamed, bashful'

c. Other parasmaipadin verbs, beginning with *ovráścū* (*vṛścáti*) 'cut, hew'

Of the udātta verbs, *ṛ́ṣī* is the only parasmaipadin base in *-ṣ* and it is accordingly put with other bases that end in this consonant.

B. The special subgroup that begins with *kúṭā* (see 164).

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1. Consonant-final bases.

a. Udātta parasmaipadin verbs, starting with *kúṭá* (*kuṭáti*) 'curve, bend'

b. The udātta ātmanepadin verb *gúrī* (*guráte*) 'make an effort'

2. Vowel-final bases.

a. Parasmaipadin verbs, from *ṇú* (*nuváti*) 'cry, praise' to *dhru* (*dhrúvati*) 'be firm'

b. The ātmanepadin verb *kuṅ* (*kuváte*) 'sound, cry'

As can be seen, this subgroup contains verbs of the type in A.2c; in addition, *kuṅ* is of the type in C.1a.

C. Other vowel-final bases.

1. Anudātta verbs.

a. The ātmanepadin verbs *pṛṅ* (*vy ā priyate*) 'be active, be engaged in something', *mṛṅ* (*mriyáte*) 'die'

b. Parasmaipadin verbs, from *ri* (*riyáti*) 'run' to *kṣi* (*kṣiyáti*) 'dwell'

2. The udātta parasmaipadin verb *sṻ* (*suváti*) 'impel'

D. The special subgroup that begins with the udātta parasmaipadin verb *kṝ* (*kiráti*) 'strew' (see 153, 164). This has three other vocalic and one consonantal base: *gṝ* (*giráti*) 'swallow', *dṛṅ* (*ā́ driyate*) 'consider, respect', *dhṛṅ* (*dhriyáte*) 'exist, subsist', *prachá* (*pṛcchati*) 'ask'

E. A group of consonant-final anudātta parasmaipadin verbs, beginning with *sṛjá* (*śrjáti*) 'let loose, create'

F. The special subgroup that begins with *mucḷ* (see 164).

1. Anudātta ubhayapadin verbs: *mucḷ* (*muñcáti, muñcáte*) 'release', *lupḷ* (*lumpáti, lumpáte*) 'break, eliminate', *vidḷ* (*vindáti, vindáte*) 'find', *lipá* (*limpáti, limpáte*) 'smear, anoint', *ṣicá* (*siñcáti, siñcáte*) 'irrigate, pour, sprinkle'

2. Udātta parasmaipadin verbs: *kṛtí* (*kṛntáti*) 'cut', *khidá* (*khindáti*) 'torment', *píśá* (*piṁśáti*) 'carve, form'

176 VII. Seventh major group (*rudhādigaṇa*), all bases of which end in consonants.

A. Anudātta ubhayapadin verbs, from *rudhir* (*ruṇáddhi, runddhé*) 'hold in, oppress, besiege' to *yujir* (*yunákti, yuṅkté*) 'join, yoke, connect.'

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B. Udātta verbs.

1. The ubhayapadin verbs *uchṛ́dhir* (*chṛṇátti, chṛṇttḗ*) 'vomit, shine, play', *utṛ́dir* (*tṛṇátti, tṛṇttḗ*) 'pierce, disregard'

2. The parasmaipadin verb *kṛ́tī́* (*kṛṇátti*) 'spin, surround'

3. The ātmanepadin verb *ñíindhī* (*inddhḗ*) 'kindle, light'

A and B.1 constitute a group of ubhayapadin verbs; B.1 and B.2 consist of bases the end in dental stops preceded by *ṛ*; *kṛ́tī* is the only udātta parasmaipadin verb of this type in the seventh major group.

C. Anudātta verbs.

1. The ātmanepadin verbs *khida* (*khintté*) 'be depressed, suffer', *vida* (*vintté*) 'consider'

2. The parasmaipadin verbs *śiṣḷ́* (*víśinaṣṭi*) 'distinguish', *piṣḷ́* (*pináṣṭi*) 'crush, grind', *bhanjó* (*bhanákti*) 'break', *bhujá* (*bhunákti* 'protects' versus *bhunkté* 'enjoys, eats': A 1.3.66 [141])

D. Udātta parasmaipadin bases, from *tṛ́hā* (*tṛṇéḍhi*) 'bruise, crush, destroy' to *pṛ́cí* (*pṛṇákti*) 'blend', the last verb in the seventh major group.

177 VIII. Eighth major group (*tanādigaṇa*); all but one of the verbs in this group end with *-n*.

A. Udātta bases in *-n*.

1. Ubhayapadin verbs, from *tánu* (*tanóti, tanuté*) 'stretch' to *ghṛ́nu* (*ghṛṇóti, ghṛṇuté*) 'shine, burn'

2. The ātmanepadin verbs *vánu* (*vanuté*) 'seek to gain, ask for', *mánu* (*manuté*) 'think, consider'

B. The verb *ḍukṛñ* (*karóti, kuruté*) 'make, do'

178 IX. Ninth major group (*kryādigaṇa*).

A. Ubhayapadin verbs, all vowel-final bases.

1. Anudātta verbs, from *ḍukrīñ* (*krīṇā́ti, krīṇīté*) 'buy' to *yuñ* (*yunā́ti, yunīté*) 'bind, tie'

2. The udātta verbs *knúñ* (*knūnā́ti, knūnīté*) 'sound', *drúñ* (*drūṇā́ti, drūṇīté*) 'hurl, harm'

B. The special subgroups that begin with *púñ* and *lúñ* (see 165); all the bases end in long vowels.

1. Udātta verbs.

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a. Ubhayapadin verbs, starting with *pūñ* (*punāti, punīté*) 'purify'

b. Parasmaipadin verbs, beginning with *pṝ* (*pṛṇāti*) 'fill, nurture'

2. Anudātta verbs, all parasmaipadin, starting with *jyā* (*jināti*) 'age'

C. Anudātta parasmaipadin verbs, from *vṛ* (*vṛṇāti*) 'choose' to *bandhá* (*badhnāti*) 'bind, tie', all vowel-final bases except for the last.

B.2 and C constitute a set of anudātta parasmaipadin verbs.

D. Udātta verbs.

1. The ātmanepadin verb *vṛñ* (*vṛṇīté*) 'choose'

2. Parasmaipadin verbs, beginning with *śranthá* (*śrathnāti*) 'loosen'

3. The ubhayapadin verb *gráhá* (*gṛhṇāti, gṛhṇīté*) 'grasp, take, seize'

179 X. Tenth major group (*curādigaṇa*).

A. Ubhayapadin verbs, starting with *cura* (*corāyati, corāyate*) 'steal' and including the subgroup that begins with *jñapa* (see 166)

B. The subgroup beginning with *cita* (166)

C. Additional ubhayapadin verbs, starting with *carca* (*carcāyati, carcāyate*) 'discuss'

D. The subgroups that begin with *yuj* and *katha* (166).

Remarks.

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180 1. In 170-179, I have described the overall arrangement of verbs within the ten major groups of the dhātupāṭha as found in the versions of this text transmitted in the Kṣīrataraṅgiṇī, Dhātupradīpa, Mādhavīyadhātuvṛtti, and Siddhāntakaumudī of Kṣīrasvāmin, Maitreyarakṣita, Sāyaṇa, and Bhaṭṭoji Dīkṣita, whose glosses are also reflected here. Not all Pāṇinīyas follow this order. In his Prakriyākaumudī (II.45), Rāmacandra has *citi* (*cétati*) 'perceive, understand' as the second verb of the first major group, instead of *édha*. Other parasmaipadin

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verbs follow, and only then (PK II.133) is *édha* given, followed by other ātmanepadin verbs. Nevertheless, the order *bhū, édha*, and so on is clearly quite old, since this is the order known to Patañjali (Bh. I.254.12 [see 133]). In his Prasāda on the Prakriyākaumudī, Viṭṭhala remarks (II.45: **दौर्गं धातु-पाठमाश्रित्य प्रतिधातु विशेषप्रक्रियामाह चिती°**) that Rāmacandra has based his presentation of verbs on the dhātupāṭha of Durga, that is, the text associated with the Kātantra grammar. In general, this order of verbs is also as in Candragomin's dhātupāṭha, although there are differences in details.

181 2. There are numerous instances where the texts transmitted by Kṣīrasvāmin and others differ as to the order of particular verbs, what verbs are included, and the shapes of verbs given. Two examples will suffice to illustrate.

a. The Kṣīrataraṅgiṇī (I.637-638) and the Dhātupradīpa (I.902-903) have *hṛñ* 'take' followed by *bhṛñ* 'bear, fill'. The Mādhavīyadhātuvṛtti (I.627-628) and the Siddhāntakaumudī (I.898-899 [3.205-206]) have *bhṛñ* followed by *hṛñ*. Since the Kṣīrataraṅgiṇī and the Dhātupradīpa are the older texts, I have adopted the order found in these works (170 [I.D.1]). After the two verbs mentioned above, three of the texts give *dhṛñ* 'support' and *ṇīñ* 'lead' (DhPr I.904-905, MDhV I.629-630, SK I.900-901 [3.207]), but the Kṣīrataraṅgiṇī (I.639-640) has *kṛñ* 'do, make' and *ṇīñ*, with *kṛñ* instead of *dhṛñ*. Commenting on Ṛgveda 1.82.1cd: **यदा नः सूनृतावतः कर आदर्थयास इत्**, Sāyaṇa argues against including *kṛñ* in the first major group of the dhātupāṭha, saying that this does not stem from the ṛṣi Pāṇini, and he supports this with references to Jinendrabuddhi's Nyāsa and to Haradatta's Padamañjarī on A 8.3.50 (Nyāsa, PM VI.539). [Sāyaṇa: **ननु डुकृञ् करण इति भूवादौ पठ्यते। अतो ण्यत्ययः कस्मात्क्रियत इति चेन्नैवम्। यस्मादस्य धातोस्तत्रपाठोऽनार्षः। तथा हि कः करत् करति इत्यत्र**

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यदाहतुर्न्यासकारहरदत्तौ न्यत्ययेन शबिति तस्मादस्य धातोर्भ्वादौ पाठो नास्तीति गम्यते।, similarly, MDhV under I.629 (p. 235)] According to Puruṣakāra on verse 39 of the Daiva (p.38: कृञित्येक इति क्षीरस्वामी।), Kṣīrasvāmin is supposed to have noted that some include *kṛñ* in the first major group.

b. Maitreya (DhPr I.649-653) gives the verbs *ūha* 'consider, reason', *gāhū* 'plunge, bathe', *gṛhū* 'grasp, take, seize', then remarks that some also include *gláha* 'seize', and finally gives the verb *ghúṣi* 'make bright, beautiful' ('make love'? [Liebich 1930: 53 note 2]). [DhPr. p. 48: ऊह वितर्के ... गाहू विलोडने ... गृहू ग्रहणे ... ग्लह इत्येके ... घुषि कान्तिकरणे।] Kṣīrasvāmin (KṣT I.429-432) gives *ūha, gāhū, gláhū, ghási.* Under the third of these entries, he remarks that Candra and Durga have *gṛhū* instead. [KṣT p. 92: गृहू इति चन्द्रदुर्गौ।] He also notes, under the entry *ghási,* that Candra and Durga respectively read *ghāṣi* and *ghúṣi.* [KṣT p. 92: चन्द्रो घषि इत्याह घंषते। घुषि कान्तिकरण इति दुर्गः घुंषते।, cf. Puruṣakāra on Daiva verse 169 (p. 102)] Sāyaṇa (MDhV I.419-422) lists *ūha, gāhū, gṛhū, ghúṣi,* and remarks (under I.422 [p. 169]) that his reading *ghúṣi* agrees with the Daiva and with Maitreya and Durga, then notes that *ghúṣi* is read here in accordance with the similarity to the next verb, *ghúṣir* 'sound, announce', which also has *ṣ.* [MDhV p. 169: स्वामी घसेति दन्त्यान्तमदुपधं पपाठ। यथा वयं तथा देवमैत्रेयदुर्गाः। षकारान्तोऽप्ययं घुषिरविशब्दन इत्युत्तरधातुसाम्यादिह पठितः।]

As can be seen from the following example, there is also evidence of earlier variation even where Kṣīrasvāmin and

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other commentators might agree.

c. The major sources agree in listing *śāsu* together with the preverb *āṅ* (*ā śāste* 'hopes, wishes') within the set of udātta ātmanepadin verbs that begins with *ír* (see 171 [II.A.2]): *āṅaḥ śāsu* (KṣT II.15, DhPr. II.12, MDhV II.15, SK 1022). From what is said in the Mahābhāṣya on A 6.1.6 (52), however, it follows that earlier Pāṇinīyas knew of an arrangment such that *āṅaḥ śāsu* was recited after the special subgroup beginning with *jákṣā* (171 [II.D]): In his second vārttika on A 6.1.6, Kātyāyana suggests (अपरिगणनंवागणान्तत्वात्।) that the number of verbs to which the name *abhyasta* is assigned by this sūtra need not be explicitly stated (*aparigaṇanam*), this name being given instead to verbs starting with *jákṣā* up to the end of the major group (*āgaṇāntatvāt*). Patañjali notes that the name *abhyasta* then obtains for *śāsu*. [Bh. III.11.10-11: इहापि तर्हि प्राप्नोति आङः शासु।] Commentators remark that some recited *āṅaḥ śāsu* after *vévīṅ* 'go after, seek'. [E.g., Pr. IV.308: वेवीङोऽनन्तरमयं कैश्चित्पठ्यत इति भावः।] Additional details concerning A 6.1.6 are considered under this sūtra in part III.2 of my work.

182 3. Given the situation described in 181, it is not possible at present to determine down to the last detail the precise organization of Pāṇini's dhātupāṭha as he first propounded this text. From what Pāṇini says in the Aṣṭādhyāyī, it is, nevertheless, clear that he distributed the verbs of his dhātupāṭha among ten major groups (155-158) and that he recognized special subgroups within these (160-166).

Now, terms such as *bhūvādayaḥ* (A 1.3.1 [47]), *divādibhyaḥ* (A 3.1.69 [157]) refer to entire groups whose first (*ādi*) members alone are specified. The last members of the groups are not indicated explicitly by comparable terms; for example, one does not know from *divādibhyaḥ* itself that the group beginning with *dívū* ends with *gṛdhú*, so that *ṣuñ* and items which follow this are not included in the set. However, there is no

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need explicitly to say that these groups end with particular verbs, since the limits of the ten major groups are known from statements in the Aṣṭādhyāyī. Thus, A 3.1.69–81 provide, under identical conditions, that *śyan, śnu, śa, śnam, u,* and *śnā,* respectively, occur with verbs of the groups that begin with *divú, ṣuñ, tudà, rudhir, tánu*, and *ḍukrīñ*. The first verb in each of these groups is the limit separating that group from the one that precedes, so that the fourth through ninth major groups are known to be segregated from each other, and the fourth group is known to be separated from those which precede. In addition, A 2.4.72, 75 (158) concern verbs of the groups that begin with *adá* and *hu,* so that the second and third major groups are known to be separated from each other, and one can see that the first major group ends where the one beginning with *adá* starts. Similarly, A 3.1.25 (281) introduces *ṇic* after the verbs of the set that begins with *cura,* so that the tenth major group is known to be segregated from the rest, and, obviously, one can see that the ninth major group ends where the tenth begins.

Moreover, if the last member of an ordered subset within a major group of the dhātupāṭha is the last member of that group itself, it follows that this too need not be specified. Pāṇini can simply use *yajādi* (A 6.1.15), *svapādi* (A 6.1.188), *puṣādi* (A 3.1.55), *mucādi* (A 7.1.59) in referring to subgroups that begin with *yajà* (160, 170 [I.G]), *ñiṣvapá* (161, 171 [II.D]), *puṣá* (163, 173 [IV.D]), and *mucḷ̀* (164, 175 [VI.F]), without having to specify the verbs that close these subsets: The groups in question end where the next major groups begin.

There are other instances, where Pāṇini must explicitly show the extent of a subset in the dhātupāṭha. He does this in several ways. First, he specifies the last verb of a group in addition the first member: *jvalitikasantebhyaḥ* of A 3.1.140 refers to a set of verbs the first of which is *jválā* (*jvaliti*) and the last of which is *kásá* (*kasanta*; see 160, 170 [I.B]). Secondly, Pāṇini refers to a given number of verbs starting with a particular base: In A 6.4.125, he refers to the seven

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(*saptānām*) verbs starting with *pháṇá* (*phaṇām*: 160, 170 [I.B]; cf. A 6.1.6, 7.4.75-76, 7.3.74, 7.2.75 [52, 385, 424, 153]). Further, in the dhātupāṭha as transmitted, the closure of certain groups is indicated by the term *vṛt*. For example, the extent of the subgroup beginning with *dyúta* (160, 170 [I.B]) is shown in this manner (KṢT I.509, DhPr. p. 54 [following I.765], MDhV I.497, SK 3.177).

vṛt is usually said to derive from the verb *vṛ́tu* 'occur, be' (e.g., KṢT I.509, DhPr. p.54, ŚIŚ 2.528, Bāl. 3.177), although some derive it from *vṛ́dhu* 'grow' (see KṢT I.509). Some who derive *vṛt* from *vṛ́tu* interpret this as an action noun, equivalent to *vartanam* (KṢT I.509), but others interpret it as an agent noun (ŚIŚ 2.528, Bāl. 3.177). Commentators also differ occasionally with respect to the use of *vṛt* and to the extent of the group this is intended to close. For example, Kṣīrasvāmin (KṢT I.561), Maitreya (DhPr. I.823), Sāyaṇa (MDhV I.550-551), and Bhaṭṭoji (SK 3.194) agree that the causative *phaṇi* (*phaṇayati*) is of the type *ghaṭi* (*ghaṭayati*), with *a* for *ā* in the base that precedes *ṇic* (see 160). Maitreya, Sāyaṇa, and Bhaṭṭoji have *vṛt* in their text following the entry for *pháṇá*, showing that the longer group which begins with *gháṭa* ends with *pháṇá*. However, Maitreya notes (DhPr. p. 59 [under I.823]) that according to some *vṛt* precedes *pháṇá*, so that this verb has a causative *phāṇi* (*phāṇayati*), which is, in fact, the earlier attested type. Kṣīrasvāmin also remarks (KṢT p. 114 [under I.561]) that according to some the longer subgroup beginning with *gháṭa* excludes *pháṇá*. Moreover, he notes too that some have *vṛt* later on, after *ṣámá*, *ṣtámá* (KṢT I.566-567 [p. 115-116], cf. MDhV p. 205-206 [under I.558]). Again, in the Kṣīrataraṅgiṇī (11.86-87), *vṛt* follows the entry for *hnuṅ*, the last verb of the second major group, and Kṣīrasvāmin remarks that *vṛt* serves here to close the subgroup beginning with *ñiṣvapá*. [वृत् स्वपादयः स्वरार्थं वर्त्तिताः।] Maitreya (DhPr. p. 85 [under 11.72]) also has *vṛt* after his entry for *hnuṅ*, but he says this occurs because the

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second major group is now complete. [वृदित्यदादि-परिसमाप्तेः।] The Kāśikā to A 6.1.188 notes that the group beginning with *ñiṣvapá* extends to where *vṛt* is given (Kāś. II.644: स्वपादिरावृत्करणात्।) showing that in this case *vṛt* occurred in versions of the dhātupāṭha known before Kṣīrasvāmin. On the other hand, this *vṛt* does not occur in the dhātupāṭha versions adopted by Sāyaṇa and Bhaṭṭoji (MDhV p. 383, SK 3.307).

I think it plausible to consider that a mechanical marking of the ends of subgroups, by means of *vṛt,* was extended to places where it was neither strictly necessary nor originally found in the dhātupāṭha which Pāṇini adopted. Additional details will be considered later in my work, under pertinent sūtras. Suffice it to say here that the use of *vṛt* to close subgroups in the dhātupāṭha was doubtless already known to Kātyāyana and Patañjali. Thus, in vārttika 1 to A 7.4.75, Kātyāyana remarks (त्रिग्रहणानर्थक्यं गणान्तत्वात्।) that using *tri* (gen..pl. *trayāṇām*) in the sūtra serves no purpose (*tri-grahaṇānarthakyam*), since the last verb which one has to refer to comes at the end of a subgroup (*gaṇāntatvāt*). This can only mean that the third entry of the subgroup in question was followed by *vṛt* in some version of the dhātupāṭha, as commentators note. [Pr. V.269: त्रिग्रहणमिति। वृत्करण-परिच्छिन्नास्त्रय एव निजादय इत्यर्थः।, Udd. X.264: धातुत्रयपाठानन्तरंवृत्करणमित्यर्थः।] There is also no reason to doubt that Pāṇini himself used this means of closing particular subgroups. Note finally that the extent of some subgroups in the dhātupāṭha is known from gaṇasūtras (Section 1.3.3).

1.3.3. Sūtras in the dhātupāṭha.

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183 The versions of the dhātupāṭha which commentators have transmitted contain not only verbs with glosses (see .33) but also sūtras, called *gaṇasūtra*, concerning particular sets of verbs. It is possible to attribute at least some of these gaṇasūtras to Pāṇini.

184 Derivates of certain verbs with penultimate short *a* in their basic forms and of verbs with basic *-ā*, including *-ā* which replaces *-ai* (A 6.1.45 [392]), require special statements. The base *ḍupacaṣ* (*pacate* 'cooks something for himself', *pacati* 'cooks something for someone else') and the derived verb *pāci* (*pācayate, pācayati* 'has .. cook'), formed with the causative suffix *ṇic* (A 3.1.26 [281]), exhibit a pattern that is widespread: to penultimate *-a-* of a basic verb corresponds *-ā-* in a derivate with the suffix *i* (A 7.2.116 [417]), as in *tyajá* 'loose, abandon', *páṭhá* 'recite, read out', *yátī* 'make an effort', *ṣadḷ'* 'sit' and the corresponding causatives *tyāji, pāṭhi, yāti, sādi*. There are also exceptions to this general pattern. Consider the following.

(a) *ghaṭa* 'happen, strive': *ghaṭate*: causative *ghaṭi* (*ghaṭayati*), action noun *ghaṭā* 'striving'; *vyátha* 'be agitated': *vyathate*: *vyathayati, vyathā* 'agitation'; *prátha* 'spread, be famous': *prathate*: *prathayati, prathā* 'fame'; *ñitvára* 'hasten, rush': *tvarate*: *tvarayati, tvarā* 'haste'

(b) *jvárá* 'have a fever': *jvarati*: *jvarayati, kákhé* 'laugh': *kakhati*: *kakhayati*

(c) *jánī* 'come into being, be born': *jāyate*: *janayati, jīṛṣ* 'age (intr.)': *jīryati*: *jarayati, gamḷ'* 'go': *gacchati*: *gamayati*

(d) *jválá* 'flame': *jvalati*: *jvālayati* / *jvalayati, pra jvalayati*; *hválá* 'go wrong, crooked': *hvalati*: *hvālayati* / *hvalayati, vi hvalayati; hmálá* 'shake (intr.)': *hmalati* : *hmālayati* / *hmalayati, pra hmalayati*; *ṇamá* 'bow, bend': *namati*: *nāmayati* / *namayati, pra ṇamayati*

(e) *glai* 'be weary': *glāyati*: *glāpayati* / *glapayati, pra glāpayati*; *ṣnā* 'bathe': *snāti*: *snāpayati* / *snapayati, pra snāpayati*

(f) *vánú* 'gain, win': *vanati*: *vānayati* / *vanayati, pra vanayati*; *ṭuvámú* 'vomit, throw up': *vamati*: *vāmayati* / *vamayati, ud*

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vamayati

(g) *kámu* 'love, desire': *kāmayate*; *ámá* 'shine, be splendid, sound, move': *amati*: *āmayati*; *cámú* 'drink, sip, consume': *ā camati*: *ā cāmayati*

(h) *śámú*: *śāmyati* 'becomes calm': *śamayati* 'calms, suppresses': *ni śāmayati* 'perceives'

(i) *yámú*: *yacchati* 'checks, controls': *ā yāmayati* 'stretches out, sets out to work': *yamayati* 'serves food'

185 As can be seen from the examples given, in some instances a verb has penultimate *-a-* also when *ṇic* follows, and in other cases this affix follows a base with either *-a-* or *-ā-* as penultimate sound. Moreover, *glāp-i, snāp-i* (184e) exhibit the same variation of penultimate *-a-* and *-ā-* before the final augment *puk*, which is regularly added to bases with *-ā* (A 7.3.36 [124]), whether this final vowel is primitive or results from replacement (e.g., *glā* < *glai*). In view of these facts, it is proper to provide for the following: First, *-ā-* substitutes for penultimate *-a-* of bases followed by an affix *ṇi* (*ṇic, ṇiṅ*), so that derivates such as *pāc-i* have long penultimate vowels, as do derivates like *glāp-i, snāp-i*, in which *-ā-* is not conditioned by the occurrence of the affix. The penultimate *-ā-* of certain such derivates is then replaced by short *-a-* in specified cases, optionally in particular instances.

186 Verbs that undergo obligatory or optional shortening of penultimate *-ā-* before an affix *ṇi* cannot all be grouped together in the dhātupāṭha. The verbs of 184a,b belong to the first major group and have derivates of the type *ghaṭ-i*, with *-a-*; but *jáṇi, jṝṣ* (184c) belong to the fourth major group in the dhātupāṭha, although they too form derivate in *-ṇic* with penultimate short *a*. The verbs of 184d have derivates of the type *jvāl-i* / *jval-i*, with optional shortening, and all these verbs belong in the first major group. In addition, the verbs of 184e form the causatives *glāp-i* / *glap-i* and *snāp-i* / *snap-i*, but *glai* belongs to the first major group of the dhātupāṭha and *snā* is in the second major set.

187 One way of designating verbs that share a particular

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operation but cannot be assigned to a single subgroup in a major gaṇa of the dhātupāṭha is to append a particular marker to all the verbs in question. These are then referred to by means of their marker in the sūtra which provides for the common operation. For example, *jṝṣ* (184c), *kṣiṣ* 'harm, destroy', *trápūṣ* 'feel shame', and *mṛjūṣ* 'wipe, clean' respectively belong in the fourth, ninth, first, second, major groups: *jīryati, kṣiṇāti, trapate, mārṣṭi.* However, they all form derivates in *-ā*: *jarā* 'aging', *kṣiyā* 'destruction', *trapā* 'shame', *mṛjā* 'cleansing'. As shown, Pāṇini appends the final consonant *ṣ* to all of these as a marker (*it*: A 1.3.3 [80]). A 3.3.104 (291) provides that the affix *aṅ* follows verbs marked with *ṣ* --- as well as the bases of a group of derivates beginning with *bhidā* (*ṣidbhidādibhyaḥ*) --- to form feminine abstract action nouns; such nominals then take the suffix *ṭāp* (A 4.1.4 [271]), giving derivates in *-ā*.

188 Suppose now that, in accordance with the sūtra

A 6.4.92: **मितां ह्रस्वः (उपधायाः णौ)** (*mitāṁ hrasvaḥ* [*upadhāyāḥ* 89, *ṇau* 90])

Pāṇini appended a marker *m* to verbs which have penultimate *-a-* in derivates with an affix *ṇi.* By this sūtra, a short vowel (*hrasvaḥ*: A 1.2.27 [35]) replaces (A 1.1.49 [90]) the penultimate (*upadhāyāḥ* [*sthāne*]: A 1.1.65 [41]) vowel (A 1.2.28 [96]) of presuffixal bases (A 6.4.1 [105]) marked with *m* (*mitām* [*aṅgānām*]) if there follows (A 1.1.66 [90]) an affix *ṇi* (*ṇau*). In fact, however, it would be hard for Pāṇini actually to append the marker *m* to all the verbs in question. Recall that certain verbs are marked with *ṣ* to show that they form derivates of the type *jarā,* with the suffix *aṅ* by A 3.3.104 (187). These verbs are so marked for this purpose because they cannot be put into a single subgroup within the dhātupāṭha. Now, *jṝṣ* is one of these verbs, and it is also one of the verbs which should be subject to shortening by A 6.4.92: *jār-i* › *jar-i.* Nevertheless, once *jṝṣ* is explicitly marked with *-ṣ,* it cannot also be recited with a marker *m.* Thus, *m* cannot be

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given as the final sound of the verb as it is recited in the dhātupāṭha, since non-final *ṣ* would then not be classed as an *it* and deleted (A 1.3.3, 9 [80-81]). Nor is it proper to provide that penultimate *ṣ* in a verb is classed as *it*. The penultimate *ṣ* of verbs such as *kṛṣá* (*karṣati*), *kṛṣâ* (*kṛṣati, kṛṣate*) 'draw, plow', *juṣī* (*juṣate*) 'enjoy' would thereby wrongly be made an *it* and deleted. Similarly, one cannot posit, for example, *jṛ́mṣ* and provide that penultimate *m* of a verb is classed as *it*, since this would allow the penultimate sounds of verbs such as *gamḷ́* 'go', *ṇamá* 'bow, bend' to be deleted. Again, it would not do to posit *mjṛ́ṣ* and provide that initial *m* in a verb is *it*. The initial consonant of a base such as *mana* 'think, consider' would then be subject to deletion. Further, as I noted in 186, verbs subject to shortening of penultimate *-ā-* before *ṇi* cannot be put in a single subgroup of the dhātupāṭha, so that it is not possible to provide that non-final *m* of bases belonging to such a subgroup is classed as *it*. In sum, *jṛ́ṣ* requires two consonantal markers in the Pāṇinian system, and this double marking poses problems.

Moreover, it is not merely a question of a single verb. Consider again the verbs of 184a,b. All these bases appear with penultimate *-a-* in derivates with *ṇic*. In order that the replacement provided for in A 6.4.92 apply to give *ghaṭ-i, vyath-i, prath-i, tvar-i, jvar-i, kakh-i*, then, these verbs should be marked with *m*. On the other hand, the bases of 184a form derivates in *-ā* of the type *ghaṭā́*, which the verbs of 184b do not form. In order that the affixation provided by A 3.3.104 (187) apply, the bases in 184a should thus be marked with *ṣ*. These require a double marking, then, which entails the problems noted.

189 These difficulties are encountered only if one requires that *ghaṭá* and the other verbs in question be recited in the dhātupāṭha with both the required markers. There is, however, another procedure, under which these problems do not ensue. Instead of reciting particular elements with given markers, one can provide by rule that they are so marked. Pāṇini

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explicitly follows this procedure in his grammar for certain affixes, introduced by sūtras of the Aṣṭādhyāyī proper. For example, A 1.2.1(513) provides that an affix not marked with *ñ* or *ṇ* is marked with *ṅ* after *gāṅ* and verbs of the subgroup beginning with *kuṭā* (164). By this rule, an affix such as *tumun* or *sic* is treated as marked with *ṅ* when it follows the verbs in question. Similarly, there could be sūtras whereby particular verbs, although they are not recited in the dhātupāṭha with both *ṣ* and *m*, are said to have both these markers. Pāṇini's sūtrapāṭha proper lacks such rules, but the dhātupāṭha as transmitted has gaṇasūtras providing for these markings. Two sūtras concern the two subgroups of verbs beginning with *ghāṭa* (160):

(a) घटादयः षितः। (*ghaṭādayaḥ ṣitaḥ*)

(b) घटादयो मितः। (*ghaṭādayo mitaḥ*)

The second sūtra applies to the larger subgroup: Verbs of this set are said to have the marker *m* (*mitaḥ*), so that they are subject to the operation stated in A 6.4.92 (188). (a) concerns the set of verbs beginning with *ghāṭa* included in the larger subgroup noted: Verbs of this set are said to be marked with *ṣ* (*ṣitaḥ*), so that they are subject to the affixation provided for by A 3.3.104 (187, 291).

Pāṇini explicitly formulates A 6.4.92 (188), but he does not, so far as is known from the earliest testimony of Pāṇinīyas, teach any verb recited with an appended marker *m*. It is therefore plausible to accept that the gaṇasūtra (b) stems from Pāṇini. Granted this, it is also plausible to say that the gaṇasūtra (a), which is pertinent to a set that again begins with *ghāṭa* but is included in the larger group covered by (b), also stems from Pāṇini. Once this is accepted, it is easy to see why Pāṇini did not formulate (a) and (b) as sūtras in his Aṣṭādhyāyī sūtrapāṭha. Since there are two groups of verbs beginning with *ghāṭa*, the term *ghaṭādayaḥ* is potentially ambiguous. However, if *ghaṭādayaḥ* is used in a sūtra stated immediately after the last verb of the particular subgroup in

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question, the term is then unambiguously understood to refer to verbs in this subset alone. Hence, Pāṇini states the gaṇasūtras (a) and (b) respectively after the last verb of the smaller and larger subgroups that start with *ghāṭa*.

Similarly,

(c) **स्वादय ओदितः।** (*svādaya oditaḥ*)

appears immediately after the verb *vṛñ* 'cover' of the fourth major group. The subgroup of verbs covered by this gaṇasūtra (DhPr. IV.34 [p. 91], KṣT IV.31, MDhV IV.32, SK 3.326 [under verb 1140]) begins with *ṣūṅ* (163). These verbs are treated as marked with *o*, so that the *t-* of *kta* and *ktavatu* following them is replaced by *n-*, as in *sūna, vṛṇa*.

190 Given that gaṇasūtras cited in 189 have to be stated in the dhātupāṭha, other sūtras, related to these, also are placed in the dhātupāṭha, although the verbs with which these deal are such that the rules in question could be stated within the Aṣṭādhyāyī sūtrapāṭha. Thus,

(a) **जनीजृष्क्नसुरञ्जोऽमन्ताश्च (मितः)**

(*janījṛṣknasurañjo'mantāś ca* [*mitaḥ* (189b)])

provides that the following verbs also (*ca*) are marked with *m*: *jánī, jṝṣ* (see 184c), *knású* (*knasyati, knasayati*) 'be crooked', *ranjà* (*rajati, rajate, rajyati, rajyate, rajayati* [see 194]), and verbs that end in *am*. According to

(b) **ज्वलह्वलह्मलनमामनुपसर्गाद्वा॥**

(*jvalahvalahmalanamām anupasargād vā*)

(c) **क्लास्नावनुवमाम्॥** (*glāsnāvanuvamām*) [see 196]

the bases *jválá, hválá, hmálá, ṇamá* (see 184d) as well as *glai, ṣnā* (see 184e), *vánú*, and *ṭuvámú* (see 184f) are optionally (*vā*) marked with *m* except when used with a preverb (*anupasargāt*). Now, *jválá, hválá, hmálá, vánú* are included in a subgroup beginning with *ghāṭa*, so that they are marked with *m* by another gaṇasūtra (189b), and (a) allows *m* marking for *ṇamá* and *ṭuvámú*, which end in *-am*. For these verbs, then, (b) and (c) provide optional marking with *m* if they are not used

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with a preverb. If they are used with a preverb, on the other hand, they are obligatorily marked with *m* by the more general gaṇasūtras. The verbs *glai* and *ṣnā* are not subject to these rules, so that (c) lets these optionally be marked with *m* except when they occur with a preverb, in which case they are not so marked.

191 There are also gaṇasūtras that disallow *m*-marking which would apply by other rules. Thus, *kámu, ámá, cámú* end in *-am*, so that these could be marked with *m* by 190a. However, one must derive *kām-i* (affix *ṇiṅ*: A 3.1.30 [281]), *ām-i, cām-i* (see 184g). Hence, the gaṇasūtra

(a) **न कम्यमिचमाम्।** (*na kamyamīcamām*)

provides that these verbs are not (*na*) marked with *m*. According to

(b) **शमोदर्शने।** (*śamodarśane* [see 199])

(c) **यमोऽपरिवेषणे।** (*yamo'pariveṣaṇe* [see 199])

marking with *m* is denied to *śāmú* and *yamú* (184h,i) under particular meaning conditions: The first verb is not marked with *m* if it is used in the meaning 'see' (*darśane*), the second if it is used in a meaning other than 'serve food' (*apariveṣaṇe*).

192 The gaṇasūtras considered in 189 are placed immediately following the last verbs of subgroups in the dhātupāṭha. There are also gaṇasūtras in the dhātupāṭha that serve as headings, hence are stated immediately before the first members of particular subgroups. Thus,

(a) **आ कुस्मादात्मनेपदिनः।** (*ā kusmād ātmanepadinaḥ* [see 201])

immediately precedes the entry *cita* of the tenth major group: Verbs from *cita* through *kusma* 'sneer' (*ā kusmāt*) take ātmanepada affixes for derivates with *ṇic* (*ātmanepadinaḥ* [see 166]). Similarly,

(b) **आ धृषाद्वा।** (*ā dhṛṣād vā* [KṣT X.201, DhPr. p. 144, MDhV X.200, SK 3.404])

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immediately precedes *yuja* of the tenth major group and provides for something that applies for the bases which follow, through *dhṛṣa* (*ā dhṛṣāt*): *ṇic* optionally (*vā*) occurs with verbs of this set (see 166).

Remarks.

193 1. Major commentators agree in transmitting the gaṇasūtras of 189 as they are cited here; see KṣT I.522, 553, IV.31; DhPr pp. 55, 58, 91; MDhV I.509, 542, IV.32; SK 3.180, 189, 326. As I have pointed out, these sūtras also can properly be said to stem from Pāṇini. Certain gaṇasūtras, on the other hand, have been transmitted in variant forms, and one can show that some sūtras included in the versions of the dhātupāṭha handed down may not be attributed to Pāṇini as formulated.

194 2. By 190a, *ranjā* is marked with *m*, so that the *-ā-* of *rāj-i* is replaced by *-a-* to give *raj-i*. The vowel of *rāj-* in *rāj-i* is gotten in the first place as a substitute for penultimate *a* (A 7.2.116 [417]), which presupposes that the *n* of *ranj* is dropped before *ṇic*, giving *raj-i* to begin with. There is, however, no Pāṇinian sūtra providing for this deletion, so that Kātyāyana suggests (A 6.4.24 vt. 3: रञ्जेर्णौमृगरमणे।) an addition to the grammar: The *n* of *ranj* (*rañjeṇ*) is dropped before *ṇi* (*ṇau*) if the verb is used in the sense of enchanting or hunting deer (*mṛgaramaṇe*); this deletion does not apply in *ranj-i* 'color'. Since dropping the *n* of *ranj* before *ṇic* is not explicitly provided for in the Aṣṭādhyāyī itself, it is reasonable to consider that the gaṇasūtra 190a as given should not be attributed to Pāṇini, although major commentators (Kāś. II.737 [on A 6.4.24], KṣT I.554, DhPr. p. 58, MDhV I.543, SK 3.189-190) have transmitted the sūtra in this form. In support of the conclusion drawn, there is the evidence of Kātyāyana's suggested addition to the grammar, which is also accepted by commentators (e.g., Kāś. II.737). Of course, despite such evidence, one may resort to interpretation in order to maintain

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that the gaṇasūtra as given was indeed known to Pāṇini. One could say, for example, that the gaṇasūtra providing for *ranj* to be marked with *m* shows that Pāṇini implicitly allowed deleting the *n* of the verb *ranj* before *ṇic*. [PM V.378: एतदेव मित्त्वकरणं ज्ञापकम् रञ्जेरकिङित्यप्युपधालोपो भवतीति।]

195 3. The gaṇasūtra 190a also has variants. Now, under the reading shown, this sūtra refers specifically to the verb *jṝṣ* of the fourth major class, the base marked with *ṣ*. It does not apply to the verb *jṝ* of the ninth major group (*jṛṇāti* 'ages'), which is not marked with *ṣ* and the causative of which is thus *jār-i*. Put slightly differently, *jṝ* 'age, decay' forms two types of present-imperfect forms and causatives. According to commentators (MDhV I.543, SK 3.190), some accept a variant of the gaṇasūtra in question, with *janījṝṣṇasu* ... instead of *janījṝṣknasu* ... Under this version, the sūtra allows *jṝ* of both the fourth and ninth classes to be marked with *m*. In addition, the sūtra now refers to a verb *ṣnāsū* of the fourth major group (*snasyati*), which is thereby marked with *m*. The verb in question is given various glosses: 'throw down' (*nirasane*: KṢT IV.4), 'eat' (*adane*: DhPr IV.5, MDhV IV.5, SK 3.322 [verb 1111]), 'take' (*ādāne*), 'not see' (*adarśane*); Sāyaṇa and Bhaṭṭoji attribute the last two to scholars other than themselves. Maitreya notes (DhPr IV.6) that according to some the base *ṣnāsū* means 'throw down' and is marked with *m*.

196 4. As I have shown, the nominative plural *mitaḥ* is understood to carry over from the gaṇasūtra 189b to 190a, which also has a nominative plural form. Since 190b,c also provide that certain verbs are marked with *m*, the term *mitaḥ* should also be understood in these sūtras. Consequently, one might expect these to have nominative plural forms: ज्वलह्वलह्मलनमोऽनुपसर्गाद्वा ग्लास्नावनुवमश्च। (*jvalahvala-hmalanamo'nupasargād vā; glāsnāvanuvamaś ca*). In fact, the sūtras are thus read by some, as Sāyaṇa notes (MDhV I.544, 545). However, they are usually transmitted as I have given

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them (DhPr pp. 58-59, MDhV I.544-555, SK 3.190-191, see also 197), which entails modifying *mitaḥ* to *mittvam* 'the property of having the marker *m*', construed with the genitive plural forms referring to bases that have this property. Yet in comparable sūtras (e.g., A 1.2.1 [513]), Pāṇini regularly uses nominative forms as in the variants of 190b,c noted above. Hence, it is at least quite possible that these gaṇasūtras do not stem from Pāṇini in the forms given.

197 5. Kṣīrasvāmin (KṢT I.555-556) also accepts versions of 190b,c with genitive plural forms referring to the verbs in question. However, according to him the sūtra 190b also refers to *cálá* 'move, shake': ज्वलह्वलह्मलचलनमामनुपसर्गाद्वा (*jvalahvalahmalacalanamām anupasargād vā*).

198 6. What I have said (196) about the gaṇasūtras 190b,c applies *mutatis mutandis* for 191a-c. Here too one expects nominative forms construed with *mitaḥ*. In fact, a related sūtra found in the dhātupāṭha transmitted by Kāśakṛtsna does have a nominative instead of a genitive plural form: KDhV I.624: ग्लास्नावनुवमश्वनक्म्यमिचमः। (*glāsnāvanuvama-śvanakamyamicamaḥ*). As explained by the commentator, this sūtra provides that a group of verbs, including *kam, am,* and *cam,* is optionally marked with *m*.

199 7. The sequence शमोदर्शने (*śamodarśane*) is ambiguous in that it can contain a term *darśane* (शमो दर्शने [*śamo darśane*]) or *adarśane* (शमोऽदर्शने [*śamo'darśane*]). Accordingly, 191b is susceptible of two interpretations. Most commentators (Kāś. I.73 [on A 1.3.89], Nyāsa I.490, DhPr. p. 59, MDhV I.547-548, SK 3.191-192) accept that 191a-c is a group of negative sūtras, so that *na* of 191a is understood to recur in the next sūtra, which has *darśane*: *śam* in the meaning 'see' is not marked with *m*. On the other hand, Kṣīrasvāmin (KṢT I.558, cf. Puruṣakāra p. 93) interprets 191b as a positive rule providing that *śam* used in a meaning other than 'see'

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(*adarśane*) is marked with *m*. Bhaṭṭoji (SK 3.193) rejects this interpretation because it conflicts with what was said in earlier works such as the Kāśikā and the Nyāsa, and indeed the gaṇasūtras 191a-c are most smoothly interpreted as a group of negative rules. Still, there is no substantive difference between the two intepretations of 191b.

Whether 191c is a negative rule or not, however, does make a substantive difference. Under the majority interpretation, this provides that *yam* used in a meaning other than 'serve food' (*apariveṣaṇe*) is not marked with *m*, but according to Kṣīrasvāmin (KṣT 1.559) it provides that *yam* is marked with *m* when used in a meaning other than 'serve food'. Additional details will be considered subsequently, in the course of the full discussion of A 6.4.92.

200 8. The tenth major group of the dhātupāṭha contains a small subgroup beginning with *jñapa* (166). In the dhātupāṭha version transmitted by most commentators (DhPr X.86, MDhV X.76, SK 3.393 [verb 1625]), the entry *jñapa* is accompanied by a statement that the verb is marked with *m*: ज्ञप मिच्च (*jñapa micca*). As transmitted by Kṣīrasvāmin, the text also includes a lengthy gloss: KṣT X.75: ज्ञप मारणतोषणनिशामनेषु मिच्च (*jñapa māraṇatoṣaṇaniśāmaneṣu mic ca*). According to Sāyaṇa (MDhV X.76), this accords with the text adopted by followers of Śākaṭāyana. After the last verb of the subset beginning with *jñapa*, there follows a gaṇasūtra: KṣT X.80: नान्ये मितोऽहेतौ च (*nānye mito'hetau ca*), DhPr p. 135, MDhV X.82, SK 3.395: नान्येमितोऽहेतौ. This provides that verbs in the tenth major group other (*anye*) than those of the preceding subgroup are not (*na*) marked with *m* (*mitaḥ*) when followed by *ṇic* that is introduced redundantly and not to signify the act of a causal agent (*ahetau*). For example, *śama* 'perceive' is part of the subset headed by 192a; this is not marked with *m*: *ni śāmayate*. But *yama* is part of the group that begins with

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jñapa and is so marked: *jñapayati*. As can be seen from the examples, the question arises whether gaṇasūtras stated elsewhere (191b,c) are sufficient to provide for the required derivates, without this sūtra in the tenth gaṇa. This will be considered in a later part of my work (IV.1) under A 6.4.92.

201 9. I have given the gaṇasūtra 192a as transmitted by most commentators (DhPr p. 137, MDhV X.120, SK 3.397), with the plural *ātmanepadinaḥ*. Kṣīrasvāmin (KṢT X.123) gives the sūtra with the singular *ātmanepadī*.

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1.4. Pāṇini's gaṇapāṭha.

1.4.0. Introduction.

202 The gaṇapāṭha consists principally of groups of items associated with particular operations. This ancillary is like the dhātupāṭha in that it too contains gaṇasūtras, some of which are properly attributed to Pāṇini (see Section 1.4.3). It differs from the dhāṭupāṭha, however, in that the lists in question are recited together with pertinent sūtras. In addition, the items that make up a set by virtue of being connected with certain operations may or may not require a class name. For example, the set of nominal bases that begins with *sarva* is given along with the sūtra A 1.1.27 (53), which assigns to these items the class name *sarvanāman*, a term used for referring to these in rules that state operations particular to the set. Similarly, by A 1.1.37 (54), the class name *avyaya* is given to nominal bases of the group beginning with *svar* as well as to members of the nipāta set, and A 1.4.57 (55) provides that members of the group beginning with *ca*, if they do not signify beings, are called *nipāta*. According to A 4.1.105 (335), the taddhita suffix *yañ* follows genitive forms of nominal bases in the set that begins with *garga*. These bases are given in a gaṇa recited along with this operational rule.

203 Items such as *sarva, svar, ca, garga* are nominal bases (*prātipadika* : A 1.2.45 [48]), but not all elements given in gaṇapāṭha groups are prātipadikas. Thus, the list referred to in A 3.1.27 (282) contains verbs. Further, some lists give derivates which result from operations, and the bases subject to these operations are to be abstracted from these derivates. For example, A 4.1.4 (271) is stated under the headings A 4.1.1, 3 (105, 107), so that the items to which *ajādi* refers should be nominal bases of a set beginning with *aja* 'goat'. However, the gaṇapāṭha text transmitted with A 4.1.4 actually lists derivates, beginning with *ajā* 'she goat', gotten by combining

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aja with the suffix *ṭāp*. In connection with this, consider some forms of *ajā* and *khaṭvā* 'bed': *aje, khaṭve* (nom.-acc. du.), *ajayā, khaṭvayā* (instr. sg.), *ajāyai, khaṭvāyai* (dat. sg.), *ajāyāḥ, khaṭvāyāḥ* (abl.-gen. sg.), *ajāyām, khaṭvāyām* (loc. sg.). It is patent that the two nominals are formally alike. Similarly, both *ajā* and *khaṭvā* cooccur with adjectival terms like *prathamā* (nom. sg. fem.) 'first'. It makes sense, therefore, to treat *ajā* and *khaṭvā* in the same way, as derivates formed with an affix (*ṭāp*). After such derivates, the dual endings *au* are replaced by *śī* (A 7.1.18 [493]), and the locative ending *ṅi* is replaced by *ām* (A 7.3.116 [497]); *-e* substitutes for the final sound of a stem in *-āp* before the instrumental ending *ā* (A 7.3.105 [483]); and endings marked with *ṅ* receive the initial augment *yāṭ* after such a stem (A 7.3.113 [499]).

Nevertheless, *ajā* and *khaṭvā* also differ in an important way. The feminine derivate *ajā* is paired with *aja* 'goat', but in actual usage *khaṭvā* is not similarly paired with a non-feminine *khaṭva*, although one has *-khaṭva* as a second member of a compound, for example, in *bahukhaṭva* 'one who has many beds'. Stating that *ṭāp* follows nominal bases of a set that begins with *aja* and giving derivates with this affix in the gaṇapāṭha is a way of capturing these facts. Both *ajā* and *khaṭvā* are used, and one is justified in treating both as derivates, but not all such terms can truly be said to derive from bases that end with *a*; hence, terms with *-ā* are listed in the gaṇapāṭha, and from these one infers bases with *-a*, some of which are simply grammarians' abstractions. The list beginning with *ajā* given under A 4.1.4 is considered simply to illustrate a type (*ākṛtigaṇa*, see 204).

1.4.1. Exhaustive listings and type listings.

204 Pāṇinīyas distinguish two kinds of groups in the gaṇapāṭha. First, there are groups whose members are exhaustively listed (*paṭhyante* 'are recited') in a given order. In addition, there are type listings (*ākṛtigaṇa*: see 210) such that

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only illustrative instances of a class are recited in the gaṇapāṭha texts accompanying particular sūtras. Consider, for example, A 2.1.59 (313), which provides that forms of the items *śreṇi* 'row, order' and following (*śreṇyādayaḥ*) combine with coreferential forms of *kṛta* 'made' and such (*kṛtādibhiḥ*) to form tatpuruṣa compounds such as *śreṇikṛta* 'made into a row, arranged in a row'. According to Pāṇinīyas from Patañjali (Bh. I.400.13) onwards, the set referred to by *śreṇyādayaḥ* is one whose members are exhaustively listed, but the group referred to by *kṛtādibhiḥ* is a type listing that includes only illustrative instances of participles such as *kṛta* (see 210).

1.4.2. Groups and subgroups in the gaṇapāṭha.

205 As groups of verbs in the dhātupāṭha include certain subgroups (see Section 1.3.2), so do groups in the gaṇapāṭha include subgroups pertinent to particular operations. For example, the set of pronominals (*sarvanāman*) given in connection with A 1.1.27 (53) has several subgroups. Some operations apply to the set of pronominals in general. Thus, when used with reference to a cause and in construction with *hetu* 'cause', any sarvanāman is followed by a third-triplet or sixth-triplet ending (A 2.3.27 [250]), and pronominal terms take the affix *akac* under conditions that determine the use of the suffix *ka* with other nominals (A 5.3.71 [354]). The ordered set of pronominals begins with *sarva* and continues with other bases in *-a,* through *antara* 'exterior', after which there is listed the subgroup that begins with *tyad* 'that' and ends with the interrogative pronoun *kim,* the last item of the pronominal set.

Before endings, the final sounds of *tyad* and following are replaced by *-a* (A 7.2.102 [476]), but *ka* replaces all of *kim* (A 7.2.103 [487]). One thus gets stems in *-a,* after which *smai* substitutes for *ṅe* and *smāt, smin* respectively substitute for *ṅasi, ṅi* (A 7.1.14-15 [492]). These substitutions apply also after stems with primitive *-ā,* but *ṅasi* and *ṅi* are only

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optionally replaced by *smāt* and *smin* after a subgroup of nine pronominals, starting with *pūrva* 'prior, eastern' (A 7.1.16). Further, there is a subgroup that starts with *dvi* 'two' and ends with *kim*: Certain taddhita affixes follow terms with pronominals other than *dvi* etc., but including *kim* (A 5.3.2 [349]).

1.4.3. Sūtras in the gaṇapāṭha.

206 The gaṇapāṭha as transmitted by Pāṇinīyas also contains gaṇasūtras. For example,

उपसर्गविभक्तिस्वरप्रतिरूपकाश्च निपाताः।

(*upasargavibhaktisvarapratirūpakāś ca nipātāḥ*)

[E.g., Kāś. I.88 (on A 1.4.57)]

is a gaṇasūtra accompanying A 1.4.57 (55). It states that items with the same shapes (*pratirūpaka*) as preverbs (*upasarga*), as items with endings (*vibhakti*), and as vowels (*svara*) also are included among elements with the name *nipāta*. One such item is *asti*, homophonous with the verb form *asti* 'is' but a nipāta according to this gaṇasūtra, hence a member of the avyaya class by A 1.1.37 (54). It is certain that the gaṇasūtra cited above was already part of the gaṇapāṭha known to Kātyāyana. Thus, in vārttika 21 to A 2.2.24, Kātyāyana suggests (सुबधिकारेऽस्तिक्षीरादिवचनम्। [*subadhikāre'stikṣīrādivacanam*]) that an addition has to be made to the grammar so as to include in the section on compound formation derivates such as *astikṣīrā* (*brāhmaṇī*) '(a Brāhmaṇa's wife) who has much milk' (see Bh. I.425.8), the feminine corresponding to *astikṣīra*. Such a compound should be derived from related nominal forms. Under the assumption that *asti* is a verbal form, with the ending *tip*, not a nominal form, the composition rule A 2.2.24 (317) will not allow deriving *astikṣīra*. In vārttika 22 on this rule, however, Kātyāyana goes on to say (न वाव्ययत्वात्। [*na vāvyayatvāt*]) that the suggested addition need not be stated,

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since *asti* is an avyaya. That is, as Patañjali explains, *asti* of a derivate like *astikṣīrā* is not a present form of *as*; it is a nipāta in accordance with the gaṇasūtra given above, hence a member of the avyaya class, so that it is indeed a nominal. [Bh. I.425.11-13: न वा वक्तव्यम्। किङ्कारणम्। अन्ययत्वात्। अन्ययमेषोऽस्तिशब्दो नैषास्तेर्लट्। कथमन्ययत्वम्। उपसर्ग-विभक्तिस्वरप्रतिरूपकाश्च निपातसंज्ञा भवन्तीति निपातसंज्ञा। निपातोऽव्ययमित्यव्ययसंज्ञा।] In the course of this explanation, Patañjali literally alludes to the gaṇasūtra, and Kātyāyana's reasoning presupposes that the gaṇapātha known to him also contained this sūtra.

207 It is probable that some such gaṇasūtras stem from Pāṇini himself. Consider now A 1.4.68: अस्तंच्वा (55). This provides that the term *astam* which is an avyaya has the class name *gati*. Obviously, Pāṇini here assumes that there is an avyaya *astam*, homophonous with but distinct from a pada such as *astam* ([acc .sg. masc., nom.-acc. sg. nt.] < *asta-am*) 'thrown'. The term in question is not included in the set that begins with *svar*; so that it is not an avyaya according to A 1.1.37 (54) by virtue of belonging to this group; nor is *astam* part of the group beginning with *ca*, so that it is not an avyaya according to A 1.1.37 by dint of belonging to the nipāta class. On the other hand, *astam* could indeed be a nipāta by the gaṇasūtra given in 206.

Remarks.

208 1. In referring to groups of items both in the dhātupāṭha and in the gaṇapāṭha, Pāṇini uses terms such as *divādi*, *juhotyādi*, *sarvādi* (A 3.1.69, 2.4.75, 1.1.27 [157, 158, 53]), which are bahuvrīhi compounds (A 2.2.24 [317]) of a particular kind. Now, if one uses the bahuvrīhi *citragu* 'spotted-cow, a person who has spotted cows' in चित्रगुरानीयताम् (*citragur ā*

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nīyatām) 'Spotted-cow should be brought', one asks that a man who has spotted cows be brought, not that cows be brought. On the other hand, if one says चित्रवाससमानय (*citravāsasam ā naya*) 'Bring the man with the bright outfit', one requests that a man be brought who is wearing a bright or multicolored garment (*citravāsasam*), so that the man's garment comes along with him. Similarly, when one says लोहितोष्णीषा ऋत्विजः प्रचरन्ति। (*lohitoṣṇīṣā ṛtvijaḥ pra caranti*) 'Red-turbaned priests are proceeding', one is speaking of priests with their turbans proceeding in a rite. In the case of compounds like *citravāsas* 'bright-garb', *lohitoṣṇīṣa* 'red-turban' used as illustrated, although these terms refer to persons characterized by their garments and their turbans, not merely to these characteristics, it is understood that such properties get involved in the activities spoken of, along with the people they characterize (*tadguṇasaṁvijñāna*). Terms such as *sarvādi* are used similarly: They refer to groups that include the elements denoted by the first members of the bahuvrīhi compounds. This is pointed out explicitly in the Mahābhāṣya on A 1.1.27 (Bh. I.86.5-8), in meeting the objection that *sarvādi* might not refer to *sarva*.

209 2. Pāṇini also uses compounds with *-prabhṛti* ('starting with') to refer to groups of the dhātupāṭha and the gaṇapāṭha; for example, *adiprabhṛti, sākṣātprabhṛti* (A 2.4.72, 1.4.74 [158, 55]). In addition, a plural form may be used to refer to a group of elements; for example, *kaḍārāḥ* in A 2.2.38 (321) refers to the group that begins with *kaḍāra*.

210 3. As commentators point out (e.g., Dīpikā 213.8-12, Pr. II.635), *śreṇyādayaḥ* and *kṛtādibhiḥ* can be considered to refer to different kinds of listings (204) in accordance with the different ways *ādi* is used. First, this term is used with reference to an arrangement (*vyavasthā*) such that a given element is the first of an ordered group. For example, someone

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who says देवदत्तादयआनीयन्ताम्। (*devadattādaya ā nīyantām*) 'Devadatta and the rest should be brought', speaking of Devadatta and others who are sitting together, is referring to a group of people arranged in a particular order; these people are fetched and brought. Further, *ādi* is used in the sense of 'kind, sort' (*prakāra*), as when one uses *devadattādi* with reference to a group of men who are like Devadatta in that they are rich, learned, handsome, and have many followers. [cf. Bh. I.258.24-26: अयमादिशब्दोऽस्त्येव व्यवस्थायां वर्तते। तद्यथा देवदत्तादीन्समुपविष्टानाह देवदत्तादय आनीयन्तामिति। त उत्थाप्यानीयन्ते। अस्ति प्रकारे वर्तते। तद्यथा देवदत्तादय आढ्या अभिरूपा दर्शनीयाः पञ्चवन्तः। देवदत्तप्रकारा इति गम्यते।] Terms like *śreṇyādi,* which refer to elements in exhaustive lists, have *ādi* in the first sense; terms such as *kṛtādi,* which refer to type listings, contain *ādi* in the second sense.

211 4. Commenting on the passage where Patañjali cites the gaṇasūtra given in 206, Kaiyaṭa remarks that this overlooks the possibility of *asti* being part of the gaṇa connected with A 1.1.37 (54). [Pr. II.714: उपसर्गविभक्तीति। स्वरादिष्वस्तिशब्दपाठमनपेक्ष्यैतदुक्तम्।] The Kāśikā (I.17) does indeed consider *asti* part of the group that begins with *svar*; but, as Nāgeśa points out (Ud. II.714: अनपेक्ष्येति। सोऽप्रामाणिक इति तत्त्वम्।) this lacks ancient authority, as is clear from what is said in the Mahābhāṣya. From this and other instances, it can be seen that Pāṇinīyas sometimes differ concerning what elements are included in particular groups of the gaṇapāṭha and the scope of gaṇasūtras. It is also known that the gaṇapāṭha was subject to expansion. Details on these points will be considered in connection with individual pertinent sūtras.

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2. PĀṆINI'S DERIVATIONAL SYSTEM

2.0. Introduction.

212 Pāṇini describes Sanskrit utterances and their constituents by means of a derivational system the units of which are: bases, presuffixal base elements or stems (*aṅga*: A 1.4.13 [46]), affixes (*pratyaya*: A 3.1.1 [15]), syntactic words (*pada*: A 1.4.14 [49]), and utterances (*vākya* [see 227]). Bases are of two general kinds: verbs (*dhātu*: A 1.3.1, 3.1.32 [47]) and nominal bases (*prātipadika* A 1.2.45-46 [48]). Verbs and nominal bases are either primitive or derived. An utterance which is or could be found in actual usage (*laukikaṁ vākyam*) is derived, by operations stated in the Aṣṭādhyāyī, from a string that cannot be found in actual communication (*alaukikaṁ vākyam*) but is posited, in order to describe a real utterance, as a sequence of syntactically and semantically related words gotten by introducing affixes to items as provided for in the grammar. Complete strings as posited in the grammar are of the type

(11) $(N\text{-}E^{n})_{p} \ldots (V\text{-}E^{v})_{p}$

That is, they consist of related padas (p) in which nominal endings (E^{n}) and verb endings (E^{v}) respectively follow nominal and verbal stems (N, V) whose meanings bear stateable relations with each other. Strings of this type are themselves derived from more abstract ones of the type

(12) $N\text{-}E^{n} \ldots V\text{-}L$

in which L-affixes follow verbs (232). Posited strings and the utterances they serve to account for can be simple or complex (Sections 2.1-2.2). Stems (*aṅga*) in respect of endings are also simple or complex, so that (11) can be rewritten as

(13) $([[B^{n}]_{a}\ (A^{f})]_{a}\text{-}E^{n})_{p} \ldots ([[B^{v}]_{a}\ (A^{v})]_{a}\text{-}E^{v})_{p}$

A simple stem with respect to a nominal or verbal ending is merely a nominal or verbal base (B^{n}, B^{v}). A complex stem in

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respect of a nominal ending consists of a nominal base and a feminine affix (A^{γ}). A complex stem with respect to a verb ending consists of a verb and one of a group of affixes, including *śap* (see 156-157), which Pāṇinīyas call *vikaraṇa* (A^{ν}).

213 Affixes are introduced under meaning conditions and cooccurrence conditions. An affix treated as signifying a particular meaning is introduced after a given unit on condition that this meaning is to be signified. An affix treated as cosignifying a meaning is introduced after a unit on condition that this be used in a meaning to be cosignified by the affix. An affix may also be introduced to a given item on condition that this cooccur with another item. Further, some affixes have to be introduced as totally redundant elements (see Section 4.1.3).

214 Pāṇini thus takes meanings into consideration from the very outset of a derivation. The particular meanings in question may be semantic notions which one can assume known to any speaker of Sanskrit, so that Pāṇini simply speaks of them using conventionally known terms. These include such notions as time references: present, current (*vartamāna* [loc. sg. *vartamāne*]: A 3.2.123 [233]), past (*bhūta* [*bhūte*]: A 3.2.110), future (*bhaviṣyat* [*bhaviṣyati*]: A 3.3.13); modalities such as commands (*vidhi*: A 3.3.161); numbers (A 1.4.21-22 [234]). In addition, Pāṇini operates with six syntactico-semantic categories to which sūtras of the Aṣṭādhyāyī assign direct participants in actions (*kāraka*). Operational rules then provide for different affixes to occur when particular kārakas as assigned to these kāraka categories are to be signified. The six category names are: *apādāna, sampradāna, karaṇa, adhikaraṇa, karman, kartṛ*; the kartṛ class also includes a subcategory called *hetu*. These class names are assigned to direct participants in actions by sūtras under the heading of

A 1.4.23: कारके (*kārake*)

which provides that subsequent rules apply with respect to kārakas (*kārake* [loc. sg.] 'in the domain of a kāraka'). Seven of

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these sūtras are:

A 1.4.24: **ध्रुवमपायेऽपादानम्।** (*dhruvam apāye'pādānam*)

A 1.4.42: **साधकतमं करणम्।** (*sādhakatamaṁ karaṇam*)

A 1.4.45: **आधारोऽधिकरणम्।** (*ādhāro'dhikaraṇam*)

A 1.4.54: **स्वतन्त्रः कर्ता।** (*svatantraḥ kartā*)

A 1.4.55: **तत्प्रयोजको हेतुश्च।** (*tatprayojako hetuś ca*)

A 1.4.49: **कर्तुरीप्सिततमं कर्म।** (*kartur īpsitatamaṁ karma*)

A 1.4.32: **कर्मणा यमभिप्रैति स सम्प्रदानम्।** (*karmaṇā yam abhipraiti sa sampradānam*)

According to these rules, the class names *apādāna* and so on apply to kārakas as follows:

A 1.4.24: *apādāna*: a firm point (*dhruvam*) with respect to movement away from something (*apāye*), that is, a point of departure

A 1.4.42: *karaṇa*: that kāraka which most serves to bring about an act (*sādhakatamam*), the means of accomplishing this act

A 1.4.45: *adhikaraṇa*: a locus (*ādhāraḥ*)

A 1.4.54: *kartṛ*: that kāraka which is spoken of as an independent (*svatantraḥ*) participant in comparison with other participants in an act

A 1.4.55: *hetu*: A kāraka that plays the role of causing an independent one (*tatprayojakaḥ*) to participate in an act is simultaneously given the class names *kartṛ* and (*ca*) *hetu*

A 1.4.49: *karman*: primary goal, that kāraka which a participant of the kartṛ class (*kartuḥ* [gen. sg.]) most wishes to reach or obtain (*īpsitatamam*) through the act in which it participates

A 1.4.32: *sampradāna*: indirect goal, that kāraka which a kartṛ intends (*abhipraiti*) as goal through the karman (*karmaṇā*) of an act

The above sūtras of themselves concern categories that are semantically characterized. Nevertheless, the kāraka

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categories are not purely semantic, as can be seen from other related rules. Thus,

A 1.4.43: **दिवः कर्म च।** (*divaḥ karma ca*)

provides that a kāraka which would have the category name *karaṇa* by A 1.4.42 also (*ca*) has the class name *karman* if the act in which it serves as means is gambling denoted by the verb *div* (*divaḥ* [gen. sg.]) 'gamble, play', and according to

A 1.4.46: **अधिशीङ्स्थासाङ्कर्मा।** (*adhiśīṅsthāsāṅ karma*)

a locus (*ādhāraḥ*: A 1.4.45) has the class name *karman* instead of *adhikaraṇa* if it functions as locus in acts denoted by three verbs with the preverb *adhi*: *adhi-śī* 'lie on', *adhi-ṣṭhā* 'stand, remain at', *adhy-ās* 'sit on, sit in, inhabit'. Obviously, the karman category is neither homogeneous nor exclusively semantic in character, since membership in the class depends also on grammatical properties. Other kāraka categories too are not exclusively semantic (see Part III.4 of my work).

215 Deriving real utterances from strings of the type (11) (212) involves positing for bases and affixes single basic forms found in such abstract strings and subject to contextual operations which account for the distribution of related variants (see Section 4.2). These operations include not only substituting one grammatical element for another and adding augments to items in grammatically characterized contexts but also replacing sounds in phonological contexts. Pāṇini thus treats both grammar and phonology in his Aṣṭādhyāyī. Moreover, in dealing with grammar, Pāṇini considers aspects of syntax, including grammatical features associated with kāraka categories (214), and takes into account relations that hold among various simple sentences and between simple and complex sentences (see Section 2.2).

216 The Aṣṭādhyāyī does not, however, deal systematically with phonetics or phonotactics. Pāṇini does not describe how sounds are produced or state the distribution of sounds --- saying, for example, that particular sounds occur in word-initial and word-final position --- separately from

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phonological rules, as do śikṣā and prātiśākhya works. On the contrary, Pāṇini presupposes, in rules like A 1.1.9-10 (33-34), an acquaintance with phonetics as a basis for his phonological statements (see 43, 224).

217 Pāṇini also does not deal with certain aspects of syntax. The Aṣṭādhyāyī does not give information about what one could characterize as the neutral word order of Sanskrit or what possible meaning differences are associated with variations in word order. Sentences such as

(14) a. पात्रमाहर। (*pātram ā hara*)

b. आहर पात्रम्। (*ā hara pātram*) 'Bring a/the cup.'

are simply derived as equivalent utterances in which a cup or vessel (*pātra*) functions as object, hence is classed as *karman* (A 1.4.49 [214]), in relation to an action that someone is commanded or asked to carry out.

218 Similarly, Pāṇini does not treat of the variation in word order of sentences such as

(15) a. भवति भिक्षान्देहि। (*bhavati bhikṣān dehi*)

b. भिक्षाम्भवति देहि। (*bhikṣām bhavati dehi*)

c. भिक्षान्देहि भवति। (*bhikṣān dehi bhavati*) 'Lady, please give me alms.'

These are to be used respectively by a Brāhmaṇa, a Kṣatriya, and a Vaiśya when begging for alms (see 226).

219 Social status can nevertheless be pertinent to a Pāṇinian rule. To account for an utterance such as

(16) भो आयुष्मानेधि देवदत्तऽ। (*bho āyuṣmān edhi devadatta3*) 'Be long-lived, Devadatta.'

in which the final vowel of the vocative *devadatta* is prolated and high-pitched, A 8.2.83 (621) must specify that this holds in an utterance used when one answers the greeting of a non-Śūdra, since the prolation and accentuation in question do not apply in an answer made to a Śūdra.

220 Moreover, the structure of Sanskrit requires Pāṇini to

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describe the positions of certain padas. Thus, according to

A 1.4.80: **ते प्राग्धातोः।** (*te prāg dhātoḥ*)

those items (*te*) that are assigned the class names *upasarga* and *gati* by preceding sūtras (see A 1.4.59-60 [55]) occur before (*prāk*) any verb (*dhātoḥ*) to which they are linked. In

A 1.4.81: **छन्दसि परेऽपि।** (*chandasi pare'pi*)

A 1.4.82: **व्यवहिताश्च।** (*vyavahitāś ca*)

Pāṇini goes on to say that in Vedic usage (*chandasi*) these also follow (*pare'pi*) and may be separated from (*vyavahitāś ca*) the verbs with which they are connected. Similarly, the Aṣṭādhyāyī includes rules stating the order of padas in compounds (see 319-321).

221 Now, compounds are derived from padaṣ, which can be independent constituents of strings. Once composition takes effect, however, the endings of padas are obligatorily deleted in most instances (A 2.4.71 [278, 301]), leaving derived nominal bases (A 1.2.46 [48]), whose constituents not only have fixed orders but also are not syntactically or semantically fully autonomous elements. For example, the padas *rā́jan-as* and *púruṣa-s* of a posited string *rā́jan-as púruṣa-s* or *púruṣa-s rā́jan-as* are separate units the order of which is not fixed, just as the order of words in *rā́jñaḥ púruṣaḥ* 'king's servant' and *púruṣo rā́jñaḥ* 'king's servant', derived from such posited strings, is not fixed. Being distinct syntactic units, terms like *rā́jñaḥ* (< *rā́jan-as*) can be construed with elements other than *púruṣaḥ*, including qualifiers; for example, one can also say *rā́jño bhāryā́* 'king's wife', *ṛddhásya rā́jñaḥ púruṣaḥ* 'servant of a rich king'. The order of constituents in a compound such as *rājapuruṣá* (< ... *rā́jan-as púruṣa-s*), however, is fixed; a compound *puruṣarājá* 'king of men, supreme man' would have a different meaning. Moreover, neither of the components of *rājapuruṣá* is independently accented. The derived nominal base is an accentual unit with high pitch on its last vowel (A 6.1.223 [602]). Further, not

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being autonomous, the constituent *rāja-* of this compound cannot be construed with a qualifier such as *ṛddhá* 'thriving, rich'. Sūtras of the Aṣṭādhyāyī providing for the order of padas in compounds thus concern items that are not autonomous elements. Padas formed from preverbs, such as *ā* (<*ā-s*) in *ā hara* of (14) (217) also are not syntactically or semantically autonomous. For a verb can be used without a preverb, but a preverb regularly occurs only with a verb. In terms of relative autonomy, then, padas formed from preverbs and padas that are constituents of compounds have a status comparable to that of units smaller than the word: bases (*prakṛti*), affixes (*pratyaya*), augments (*āgama*). All such items have generally fixed positions, which are described in rules of the Aṣṭādhyāyī. Opposed to these, one has padas that are syntactic units in utterances. Such items have various possible orders, which are not dealt with in the Aṣṭādhyāyī.

222 As I pointed out in 215, Pāṇini takes into account relations among various utterances. He considers such relations, however, only in so far as they are linked to particular grammatical features and operations such as affixation. Consequently, Pāṇini does not describe systematically relations among certain types of sentences, such as positive and negative, declarative and interrogative sentences, or sentences with and without relative clauses.

223 Briefly, then, the Aṣṭādhyāyī is essentially a grammar the upper limit of which is the utterance, although this can be a complex sentence. In this grammar, Pāṇini takes into account explicitly what is describable in terms of affixation or composition rules and related rules of substitution and iteration, including accentual rules, all concerning bases, stems, affixes, and syntactic words in sentences. This is done by means of a derivational system which aims strictly at describing Sanskrit --- including Vedic --- usage, without attempts at universality.

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224 1. Patañjali remarks that grammar (*vyākaraṇam*) is a later science (*uttarā vidyā*), which a student can understand once he has received instruction in works relative to Vedic texts (*chandhaśāstreṣv abhivinītaḥ*). [Bh. I.208.19-20: **व्याकरणं नामेयमुत्तरा विद्या। सोऽसौ छन्दःशास्त्रेष्वभिविनीत उपलब्ध्यावगन्तुमुत्सहते।**] As Nāgeśa notes (Ud. II.49: **छन्दःशास्त्रेषु। प्रातिशाख्यशिक्षादिषु।**), these works include prātiśākhya and śikṣā treatises. That is, Patañjali speaks here of works that deal with phonetics, an area one is supposed to know when undertaking the study of grammar. As I pointed out (216), Pāṇini does indeed presuppose a background in phonetics of those who study his grammar. There is only one sūtra in the Aṣṭādhyāyī which actually teaches the pronounciation of particular sounds. According to A 1.2.32 (36), a vowel that has the name *svarita* by A 1.2.31 is high-pitched (*udāttam*) for the length equivalent to that of half a short vowel (*ardhahrasvam*) from its beginning (*āditaḥ*). This is clearly a statement of phonetic detail, describing a svarita vowel as high-pitched for the duration of half a mora. Pāṇini describes the pronunciation of svarita vowels, however, for a metalinguistic reason: One of competing pronunciations of such vowels is used for marking adhikāras (A 1.3.11 [115]; see 'Pāṇini's definition, description, and use of *svarita*', *Pratidānam* [Festschrift F. B. J. Kuiper, The Hague: Mouton, 1968], pp. 448-461).

225 2. Patañjali remarks also (Bh. I.39.17-19: **नेह प्रयोगनियम आरभ्यते। किन्तर्हि। संस्कृत्य संस्कृत्य पदान्युत्सृज्यन्ते तेषां यथेष्टमभिसम्बन्धो भवति। तद्यथा आहर पात्रम् पात्रमाहरेति।**) that no restriction concerning the order of padas used in an utterance is undertaken in the grammar; padas are formed and left to be (*saṁskṛtya saṁskṛtya padāny utsṛjyante*, see 843), their order (*abhisambandhaḥ*) being according to what one wishes (*yatheṣṭam*), as in (14a,b) (217). Commenting on this

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Bhāṣya passage, Kaiyaṭa notes that Patañjali here uses *prayoga* (in *prayoganiyamaḥ* 'restriction on what is used') as an object noun referring to independently used padas. Kaiyaṭa also remarks that while no restriction is undertaken in the grammar with respect to autonomous padas, the grammar does undertake a restriction on the order of terms which make up such padas: bases, affixes, prior members of compounds, augments. [Pr. I.129: **नेहेति। प्रयुज्यत इति प्रयोगः। तस्य स्वतन्त्रस्य पदस्य प्रयुज्यमानस्य नियमो नारभ्यते अपि तु पदावयवस्य प्रकृतिप्रत्ययोपसर्जनागमादिरूपस्य।]**

226 3. The Aṣṭādhyāyī deals with phonological properties of sentences like (16) (219), but Pāṇini does not concern himself with the word order variation in sentences like (15a-c) (218). Works concerned with rules of behavior do deal with such variation. Pāraskaragṛhyasūtra 2.5.2-4 **(भवत्पूर्वाम्ब्राह्मणो भिक्षेत। भवन्मध्यां राजन्यः। भवदन्त्यां वैश्यः।)**, Manusmṛti 2.49 **(भवत्पूर्वञ्चरेद्भैक्षमुपनीतो द्विजोत्तमः। भवन्मध्यन्तु राजन्यो वैश्यस्तुभवदुत्तरम्॥)** say that a Brāhmaṇa (*brāhmaṇaḥ, dvijottamaḥ*), a Kṣatriya (*rājanyaḥ*), and a Vaiśya (*vaiśyaḥ*) respectively should ask for alms (*bhikṣeta, bhaikṣañ caret*) using sentences in which the respectful pronoun *bhavatu* (voc. sg. fem. *bhavati*) comes first, in the middle, and last. Examples (15a-c) are taken from commentaries on these texts.

227 4. From the verb *vacá* 'say, speak' are derived, with the suffix *ṇyat* (A 3.1.124 [292]), both *vācya*, which refers in general to anything that can be said or is to be said, and *vākya*, which denotes in particular a speech unit, an utterance or sentence. Pāṇini provides in A 7.3.67 (432) that the *-c* of *vac* is not replaced by a velar stop before *ṇyat* unless the derivate in question is a term naming a linguistic unit (*aśabdasaṁjñāyām*). Pāṇini thus obviously recognizes that *vākya* denotes a particular speech unit, and he uses the term

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accordingly (e.g., A 8.2.82 [621]). He does not, however, introduce *vākya* as a technical term of his grammar in the way he introduces terms such as *aṅga, pratyaya, pada* (see 212), and *vākya* does not refer, in Pāṇini's system, to any particularly circumscribed utterance such as one would call technically a sentence. For there are no specific operations stated in the Aṣṭādhyāyī that call for introducing *vākya* as a class name for any utterance so defined. Later, Pāṇinīyas from Kātyāyana on do attempt to define a vākya in particular ways. I take up this issue in a subsequent part of my work.

228 5. Pāṇini uses two terms with reference to what any verb can denote: *kriyā* ('doing, action') and *bhāva* ('being, becoming, state'). The former, a derivate of *ḍukṛñ* 'do, make', reflects the view that verbs denote varieties of actions; the latter, a derivate of *bhū* 'be, become', ultimately reflects the view that verbs denote various states of being and becoming. Pāṇini clearly does not adhere to either view exclusively. He does not attempt any semantic definition of verbs (cf. A 1.3.1, 3.1.32 [47]). On the other hand, Pāṇini does consider that any verb denotes something that is brought to accomplishment in time. The term *kāraka,* which Pāṇini uses without defining (A 1.4.23 [214]), refers to something that directly contributes to an act's being accomplished. Any kāraka, then, is properly termed *sādhaka* 'that which accomplishes'. In A 1.4.42, Pāṇini uses the superlative *sādhakatamam* in order to exclude from the karaṇa category kārakas that are not the immediate means of accomplishing an act. Similarly, Pāṇini uses the superlative *īpsitatamam* 'most sought to be reached, obtained' in A 1.4.49 to exclude other goals from the karman category. However, a given act may have more than one karaṇa or karman taking part in it.

In connection with the kāraka category names, note that, although these categories are clearly not purely semantic, I shall use 'instrument', 'locus', 'object', and 'agent' as conventional glosses for the Pāṇinian terms *karaṇa, adhikaraṇa, karman,* and *kartṛ*. There is no single English term

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appropriate even as a conventional gloss for either *apādāna* or *sampradāna*, so that I adopt these Sanskrit terms in English. Note, finally, that I shall use 'act' or 'action' as conventional English equivalents for *kriyā* and *bhāva* used with reference to a verb's meaning (*dhātvartha*), without thereby implying any particular theoretical stance.

2.1. Simple sentences.

229 A simple sentence involves a single action, denoted by a verb (see 228). Nominal terms in such a sentence may be linked to the verb or to other nominals. For example, in

(17) राज्ञः पुरुषो नगरं गच्छति। (*rājñaḥ puruṣo nagaraṁ gacchati*) 'The king's servant is going to the city.'

two nominal terms are linked to the verb form *gacchati*: *puruṣo* (nom. sg. < *puruṣa-s*) 'man' and *nagaraṁ* (acc. sg. < *nagara-am*) 'city'; but *rājñaḥ* (gen. sg. < *rājan-as*) 'king' is linked only with *puruṣo*. Nominal bases linked with verbs are said to refer to kārakas (see 214, 228). In (17), the bases *puruṣa* and *nagara* respectively signify an agent and object (*kartṛ*, *karman*: A 1.4.54, 49 [214, 228]) of going, signified by the verb *gamḷ* (3sg. pres. indic. *gacchati*). The base *rājan*, on the other hand, here refers to a king spoken of merely as related to a man in his service.

Affixes are introduced to bases and stems with feminine affixes on condition that given kārakas are to be signified. The affixes thus introduced are deictic in that they designate unspecified kārakas. The nominal stems used in sentences denote the particular individuals in questions, so that they are coreferential (*samānādhikaraṇa*) with affixes which signify kārakas. In addition, certain nominal endings are introduced when relations between the meanings of nominals are to be signified. Nominative endings stand apart in that they are not treated as signifying kārakas or relations (A 2.3.46-47 [240]).

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The bases and affixes of (17) are shown in

(18) राजन्-अस् पुरुष-स् नगर-अम्$_{\text{कर्म}}$ गम्-अ-ति$_{\text{कर्ता}}$

(*rājan-as puruṣa-s nagara-am*$_{\text{karman}}$ *gam-a-ti*$_{\text{kartṛ}}$)

an abstract string from which (17) is derived. The nominal stem *nagara-* is followed by the object-signifying ending *am* (A 2.3.2 [240]), the verbal stem *gam-a-* by the agent-signifying ending *tip* (A 3.4.69, 77, 78 [232]), the verb *gam* by the vikaraṇa *śap* (A 3.1.68 [157]); the relational ending *ṅas* (A 2.3.50 [251]) follows *rājan-*, and the ending *su* follows *puruṣa-*. At an earlier stage of derivation, *gam* is followed simply by the L-affix *laṭ* (A 3.2.123 [233]).

230 Pāṇini's derivational system serves not only to describe utterances but also to show how certain utterances are related to others. In order to illustrate this, let us consider the following simple sentences with abstract strings from which they derive.

(19) b. देवदत्त ओदनं पचति। (*devadatta odanaṁ pacati*) 'Devadatta is cooking rice.'

a. देवदत्त-स् ओदन-अम् पच्-अ-ति (< पच्-लट्)

(*devadatta-s odana-am pac-a-ti* [< *pac-laṭ*])

(20) b. देवदत्तेनौदनः पच्यते। (*devadattenaudanaḥ pacyate*) 'Rice is being cooked by Devadatta.'

a. देवदत्त-आ ओदन-स् पच्-य-ते (< पच्-लट्)

(*devadatta-ā odana-s pac-ya-te* [< *pac-laṭ*])

(21) b. देवदत्त ओदनमपाक्षीत्। (*devadatta odanam apākṣīt*) 'Devadatta has cooked rice.'

a. देवदत्त-स् ओदन-अम् पच्-स्-त् (< पच्-लुङ्)

(*devadatta-s odana-am pac-s-t* [< *pac-luṅ*])

(22) b. देवदत्तेनौदनोऽपाचि। (*devadattenaudano'pāci*) 'Rice has been cooked by Devadatta.'

a. देवदत्त-आ ओदन-स् पच्-इ-त (< पच्-लुङ्)

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(*devadatta-ā odana-s pac-i-ta* [< *pac-luṅ*])

(23) b. देवदत्त ओदनमपचत्। (*devadatta odanam apacat*) 'Devadatta cooked rice.'

a. देवदत्त-स् ओदन-अम् पच्-अ-त् (< पच्-लङ्)

(*devadatta-s odana-am pac-a-t* [< *pac-laṅ*])

(24) b. देवदत्तेनौदनोऽपच्यत। (*devadattenaudano' pacyata*) 'Rice was cooked by Devadatta.'

a. देवदत्त-आ ओदन-स् पच्-य-त (< पच्-लङ्)

(*devadatta-ā odana-s pac-ya-ta* [< *pac-laṅ*])

(25) b. देवदत्त ओदनं पपाच। (*devadatta odanaṁ papāca*) 'Devadatta cooked rice.'

a. देवदत्त-स् ओदन-अम् पच्-अ (< पच्-लिट्)

(*devadatta-s odana-am pac-a* [< *pac-liṭ*])

(26) b. देवदत्तेनौदनः पेचे। (*devadattenaudanaḥ pece*) 'Rice was cooked by Devadatta.'

a. देवदत्त-आ ओदन-स् पच्-ए (< पच्-लिट्)

(*devadatta-ā odana-s pac-e* [< *pac-liṭ*])

(27) b. देवदत्त ओदनं पचति स्म। (*devadatta odanaṁ pacati sma*) 'Devadatta cooked rice.'

a. देवदत्त-स् ओदन-अम् पच्-अ-ति (< पच्-लट्) स्म-स् (*devadatta-s odana-am pac-a-ti* [< *pac-laṭ*] *sma-s*)

(28) b. देवदत्तेनौदनः पच्यते स्म। (*devadattenaudanaḥ pacyate sma*) 'Rice was cooked by Devadatta.'

a. देवदत्त-आ ओदन-स् पच्-य-त (< पच्-लट्) स्म-स् (*devadatta-ā odana-s pac-ya-ta* [< *pac-laṭ*] *sma-s*)

(29) b. देवदत्त ओदनं पक्ष्यति। (*devadatta odanaṁ pakṣyati*) 'Devadatta will cook rice.'

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a. देवद्-स्ओदन-अम्पच्-स्य-ति(< पच्-लृट्)
(*devadatta-s odana-am pac-sya-ti* [< *pac-lṛṭ*])

(30) b. देवदत्तेनौदनः पक्ष्यते> (*devadattenaudanaḥ pakṣyate*) 'Rice will be cooked by Devadatta.'

a. देवदत्त-आ ओदन-स्पच्-स्य-ते(< पच्-लृट्)
(*devadatta-ā odana-s pac-sya-te* [< *pac-lṛṭ*])

(31) b. देवदत्त ओदनं पचतु। (*devadatta odanaṁ pacatu*) 'Devadatta should cook rice.'

a. देवदत्त-स्ओदन-अम्पच्-अ-तु(< पच्-लोट्)
(*devadatta-s odana-am pac-a-tu* [< *pac-loṭ*])

(32) b. देवत्तनौदनः पच्यताम्। (*devadattenaudanaḥ pacyatām*) 'Rice should be cooked by Devadatta.'

a. देवदत्त-आ ओदन-स्पच्-य-ताम्(< पच्-लोट्)
(*devadatta-ā odana-s pac-ya-tām* [< *pac-loṭ*])

(33) b. देवदत्त ओदनं पचेत्। (*devadatta odanaṁ pacet*) 'Devadatta should cook rice.'

a. देवदत्त-स् ओदन-अम् पच्-अ-यास्स्त्
(< पच्-लिङ्) (*devadatta-s odana-am pac-a-yāsst* [< *pac-liṅ*])

(34) b. देवदत्तेनौदनः पच्येत। (*devadattenaudanaḥ pacyeta*) 'Rice should be cooked by Devadatta.'

a. देवदत्त-आ ओदन-स् पच्-य-सीय्स्त
(< पच्-लिङ्) (*devadatta-ā odana-s pac-ya-sīysta* [< *pac-liṅ*])

231 (19)-(34) concern one activity, cooking, denoted by different temporal and modal third person singular forms of *ḍupacaṣ* 'cook, bake': *pacati* (pres. ind. act. [(19), (27)]), *pacyate* (pres. ind. pass. [(20), (28)]), *apākṣīt* (aor. ind. act. [(21)]), *apāci* (aor. ind. pass. [(22)]), *apacat* (impfct. ind. act. [(23)]), *apacyata* (impfct. ind pass. [(24)]), *papāca* (pfct. ind.

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act. [(25)]), *pece* (pfct. ind. pass. [(26)]), *pakṣyati* (fut. ind. act. [(29)]), *pakṣyate* (fut. ind. pass. [(30)]), *pacatu* (imper. act. [(31)]), *pacyatām* (imper. pass. [(32)]), *pacet* (opt. act. [(33)]), *pacyeta* (opt. pass. [(34)]). These sentences all speak of this act being performed by a man named Devadatta, whose primary goal in cooking is to produce softened rice (*odana*): Devadatta is the agent (*kartṛ*: A 1.4.54 [214]) and the rice is the object (*karman*: A 1.4.49) relative to cooking. (19)-(34) are thus all related to each other. Some of these sentences, however, are more closely related than others. Active and passive pairs (19)-(20), (21)-(22), and so on are equivalent utterances in that they not only involve the same particular kārakas related to the same action in a like manner but also the same time reference or modality. Now, (21)-(28) have a general time reference in common, but there are here three groups of equivalent sentences: (21)-(22), (23)-(24), and (25)-(28). The first two are used if cooking has been accomplished at some time in the past (*bhūte*: A 3.2.110 [233]). (23)-(28), on the other hand, can be used only if the act has been accomplished at a time in the past that excludes the day on which a speaker referring to it utters the sentences (*anadyatane*: A 3.2.111). Further, (25)-(28) differ from (23)-(24) in that they are used if the act in question was not witnessed by the speaker (*parokṣe*: A 3.2.115).

232 In his derivational system, Pāṇini shows that sentences such as (19)-(34) (230) are related by having them share operations. He posits ten abstract L-affixes (*lakārāḥ* 'L's') that are introduced after verbs (*dhātoḥ*: A 3.1.91 [66]). Six of these are marked with *ṭ* (*ṭitaḥ*), four with *ṅ* (*ṅitaḥ*): *laṭ liṭ luṭ lṛṭ leṭ loṭ*; *laṅ liṅ luṅ lṛṅ*. According to

A 3.4.69: लः (कर्तरि) कर्मणि च भावे चाकर्मकेभ्यः।

(*laḥ* [*kartari* 67] *karmaṇi ca bhāve cākarmakebhyaḥ*)

any L-affix (*laḥ*) follows a verb when an agent (*kartari*) or an object (*karmaṇi*) is to be signified and, with verbs that are

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objectless (*akarmakebhyaḥ*) in given derivations, when an agent or the mere act signified by the verb (*bhāve*: see 228) is to be designated. In general, any L-affix is replaced (*lasya* [*sthāne*]: A 1.1.49 [90]) by a verb ending. The sūtras

A 3.4.77: **लस्य।** (*lasya*)

A 3.4.78: **तिप्तस्झिसिप्थस्थमिब्वस्मस्ताताञ्झथासाथान्-ध्वमिड्वहिमहिङ्।** (*tiptasjhisipthasthamib-vasmastātāñjhathāsāthāndhvamiḍvahimahiṅ*)

provide for basic verb endings (see 64 with Figure A) to replace any L-affix. Pairs of equivalent sentences such as (19)-(20) are thus reduced to alternative strings of the type (12) (212):

(35) a. **देवदत्त-स् ओदन-अम्$_{\text{कर्म}}$ पच्-ल्$_{\text{कर्ता}}$**

(*devadatta-s odana-am$_{\text{karman}}$ pac-L$_{\text{kartṛ}}$*)

b. **देवदत्त-आ$_{\text{कर्ता}}$ ओदन-स् पच्-ल्$_{\text{कर्म}}$**

(*devadatta-ā$_{\text{kartṛ}}$ odana-s pac-L$_{\text{karman}}$*)

with an L-affix introduced alternatively to signify an agent or an object. In strings of the type (35a), a second-triplet (accusative) ending (*am*) signifying an object (*karman*: A 2.3.2 [240]) follows *odana*, and a first-triplet (nominative) ending (*su*) follows *devadatta*; in strings of the type (35b), a third-triplet (instrumental) ending (*ṭā*) signifying an agent (*kartṛ*: A 2.3.18) follows *devadatta*, and a first-triplet ending follows *odana*.

An L-affix may alternately be replaced by either a verb ending or a participial suffix. Thus, according to

A 3.2.106: **लिटः कानज्वा (छन्दसि)**

(*liṭaḥ kānaj vā* [*chandasi* 105])

A 3.2.107: **क्वसुश्च।** (*kvasuś ca*)

liṭ is replaced not only by verb endings but also, optionally (*vā*), by the participial suffixes *kānac, kvasu;* e.g., *cikyāna*

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[nom. sg. masc. *cikyānaḥ*), *jakṣivas* (*jakṣivān*) from *ci* 'gather, heap up', *ghas* 'eat'. These sūtras account for usage in Vedic language (*chandasi*), but

A 3.2.108: **भाषायां सदवसश्रुवः।** (*bhāṣāyāṁ sadavasaśruvaḥ*)

provides that *kvasu* optionally substitutes for *liṭ* after *sad* 'sit', *vas* 'remain, dwell', *śru* 'hear, listen' (*sedivas, ūṣivas, śuśruvas* [*sedivān, ūṣivān, śuśruvān*]), and this rule accounts for usage in the non-Vedic language (*bhāṣāyām*).

233 Other rules give conditions under which particular L-affixes are introduced. For example:

A 3.2.110: **लुङ् (भूते)** (*luṅ* [*bhūte* 84])

A 3.2.111: **अनद्यतने लङ्** (*anadyatane laṅ*)

A 3.2.115: **परोक्षे लिट्।** (*parokṣe liṭ*)

A 3.2.118: **लट् स्मे।** (*laṭ sme*)

A 3.2.123: **वर्तमाने लट्।** (*vartamāne laṭ*)

A 3.3.13: **लृट् (भविष्यति) शेषे च।** (*lṛṭ* [*bhaviṣyati* 3] *śeṣe ca*)

A 3.3.15: **अनद्यतने लुट्।** (*anadyatane luṭ*)

provide that different L-affixes occur when various time references are involved, as follows:

A 3.2.110: *luṅ*: past (*bhūte*)

A 3.2.111: *laṅ*: past excluding the day on which the speaker uses the utterance in question (*anadyatane* [*bhūte*] ' ... excluding today')

A 3.2.115: *liṭ*: past excluding the day on which the speaker uses the utterance in question, provided also that the speaker has not witnessed the action spoken of (*parokṣe* 'beyond direct perception')

A 3.2.118: *laṭ*: the conditions that apply for *liṭ* by A 3.2.115, with an additional cooccurrence condition: the verb is used with *sma*.

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A 3.2.123: *laṭ*: present, current (*vartamāne*)
A 3.3.13: *lṛṭ*: future (*bhaviṣyati*)
A 3.3.15: *luṭ*: future excluding the day on which the speaker uses the utterance in question (*anadyatane*)

L-affixes are also introduced under modal conditions. For example,

A 3.3.161: **विधिनिमन्त्रणामन्त्रणाधीष्टसम्प्रश्नप्रार्थनेषु लिङ्।** (*vidhinimantraṇāmantraṇādhīṣṭa-sampraśnaprārthaneṣu liṅ*)

lets *liṅ* follow a verb when the following are involved: command to an inferior (*vidhi*), summoning someone to do something that person should do (*nimantraṇa*), invitation to do something one may do (*āmantraṇa*), respectfully made request (*adhīṣṭa*), deliberation (*sampraśna*), prayer (*prārthana*)..

A 3.3.162: **लोट् च।** (*loṭ ca*)

provides that *loṭ* also (*ca*) occurs under the same conditions. Further, according to

A 3.3.173: **आशिषि लिङ्लोटौ।** (*āśiṣi liṅloṭau*)

liṅ and *loṭ* (*liṅloṭau*) are alternately introduced when one expresses a wish (*āśiṣi*). In abstract strings that account for utterances used in sacred literature (*chandasi*), moreover, *leṭ* occurs under the meaning conditions that serve for introducing *liṅ* (*liṅarthe*):

A 3.4.7: **लिङर्थे लेट् (छन्दसि)** (*liṅarthe leṭ* [*chandasi* 6])

That is, not only optative but also subjunctive forms are found in Vedic usage where later Sanskrit uses only the optative. (19a)-(34a) (230) contain forms with different L-affixes under conditions shown: (19a)-(20a): *laṭ* by A 3.2.123, (21a)-(22a): *luṅ* by A 3.2.110, (23a)-(24a): *laṅ* by A 3.2.111, (25a)-(26a): *liṭ* by A 3.2.115, (27a)-(28a): *laṭ* by A 3.2.118, (29a)-(30a): *lṛṭ* by A 3.3.13, (31a)-(32a): *loṭ* by A 3.3.162, (33a)-(34a): *liṅ* by A 3.3.161.

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234 A 3.4.78 (232) simply allows a series of basic verb endings possibly to substitute for an L-affix. Restrictive rules come into play to specify what particular endings occur under different conditions. First, a choice is made between the sets of endings called *ātmanepada* and *parasmaipada* (see 137-143). The verb *ḍupacaṣ̌* is taught in the dhātupāṭha with a svarita vowel marker, so that it takes ātmanepada affixes signifying an agent if the agent in question cooks something for himself (A 1.3.72 [139]). (19b), (21b), (23b), (25b), (27b), (29b), (31b), and (33b) are used to speak of Devadatta cooking rice for someone else, so that parasmaipada endings are selected to replace L-affixes signifying an agent (A 1.3.78 [142]). The L-affixes of (20a), (22a), (24a), (26a), (28a), (30a), (32a), and (34a) are introduced to signify an object, so that they are replaced by ātmanepada endings (A 1.3.13 [138]).

Within the parasmaipada and ātmanepada sets of endings, a selection is next made among the triplets called *prathama, madhyama,* and *uttama* (A 1.4.101 [64]). According to

A 1.4.105: युष्मद्युपपदेसमानाधिकरणेस्थानिन्यपि मध्यमः। (*yuṣmady upapade samānādhikaraṇe sthāniny api madhyamaḥ*)

A 1.4.107: अस्मद्युत्तमः। (*asmady uttamaḥ*)

if a form of the second person pronoun *yuṣmad* (*yuṣmadi* [loc. sg.]) that is coreferential (*samānādhikaraṇe*) with an L-affix in a derivation could be used as a cooccurring word (*upapade*), even if it is not actually used (*sthāniny api*), then a madhyama ending is selected to replace the L-affix, and an uttama ending replaces an L-affix if, under the same conditions, the potentially usable term is a form of the first person pronoun *asmad.* By

A 1.4.108: शेषे प्रथमः। (*śeṣe prathamaḥ*)

a prathama ending substitutes for an L-affix if none of the conditions given in preceding sūtras obtains (*śeṣe* 'remainder'). The L-affixes of (19a)-(34a) are coreferential with either

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devadatta-s or *odana-s*, so that prathama endings are chosen in accordance with A 1.4.108.

Once a choice has been made among prathama, madhyama, and uttama endings, one finally selects an ekavacana, dvivacana, or bahuvacana ending (A 1.4.102 [64]). The choice depends on the number of things signified:

A 1.4.21: बहुषु बहुवचनम्। (*bahuṣu bahuvacanam*)

A 1.4.22: द्व्येकयोर्द्विवचनैकवचने। (*dvyekayor dvivacanaikavacane*)

provide that a bahuvacana ending occurs if there are many (*bahuṣu*) things and that dvivacana and ekavacana endings occur respectively if there are two and one (*dvyekayoḥ*).

In this way, the agentive ending selected for (19), (21), (23), (25), (27), (29), (31), and (33) is the parasmaipada prathama ekavacana affix *tip*, and the object-signifying ending chosen for (20), (22), (24), (26), (28), (30), (32), and (34) is the ātmanepada prathama ekavacana affix *ta*.

235 Basic endings such as *tip* and *ta* are subject to operations that depend on the sources and contexts of the endings. As I pointed out in 232, some L-affixes are marked with *ṭ*, others with *ṅ*. That part of an ātmanepada ending that begins with its last vowel (*ṭi*: A 1.1.64 [41]) is replaced by *e* (A 3.4.79 [396]) if the ending derives from an L-affix marked with *ṭ*, and *-i* of a parasmaipada ending that replaces an L-affix marked with *ṅ* is dropped (A 3.4.100 [400]). If *ta* and *tip* derive from *liṭ*, however, they are respectively replaced by *eś* and *ṇal* (A 3.4.81-82 [396-397]). Endings deriving from *loṭ* undergo particular substitutions: *-i*, *-e* of such endings are replaced by *-u*, *-ām* (A 3.4.86, 90 [398]). Some endings also receive augments. Thus, an ātmanepada ending replacing *liṅ* gets the initial augment *sīyuṭ*, and a parasmaipada ending derived from this L-affix is augmented with *yāsuṭ* (A 3.4.102-103 [401]). In addition, *suṭ* is added before *t* or *th* of an ending gotten from *liṅ* (A 3.4.107). Augments are also added to endings after particular stems. For example, the

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initial augment *iṭ* is added to an aprkta affix (A 1.2.41 [74]) after a stem that ends with the suffix *sic* (A 7.3.96 [440]).

236 Some verbal suffixes determine the introduction of additional affixes to verbs. Among these affixes, which Pāṇinīyas call *vikaraṇa,* are *yak* of forms such as *pacyate, apacyata* in (20), (24), *śap* of forms such as *pacati* in (19), and other affixes introduced to verbs of particular stems when these occur with agentive sārvadhātuka suffixes (see 156-157).

Other vikaraṇas are introduced to verbs when these occur with suffixes that replace particular L-affixes. Thus, by

A 3.1.33: स्यतासी लृलुटोः। (*syatāsī lṛluṭoḥ*)

sya and *tāsi* respectively (A 1.3.10 [91]) follow verbs used with suffixes that replace L-affixes *lṛ, luṭ* (A 3.3.13,15 [233]); *lṛ* is a cover term used to refer to two L-affixes: *lṛṭ* (A 3.3.13) and *lṛṅ* (A 3.3.139 [258]). The vikaraṇa *sya* occurs in forms such as *pakṣyati, pakṣyate* of (29), (30), and conditional forms such as *apakṣyat* 'would cook, would have cooked', *apakṣyata* 'would be cooked, would have been cooked'; *tāsi* is found in forms such as *paktāsmi* 'I shall cook'.

To account for Vedic subjunctive forms such as *dāsat* 'should, will give', *mandiṣat* 'should, will gladden', with *-s-* and augmented *-iṣ-*;

A 3.1.34: सिब्बहुलं लेटि। (*sib bahulaṁ leṭi*)

provides that *sip* is introduced, variously (*bahulam*), after a verb used with an ending that derives from *leṭ* (*leṭi*).

According to

A 3.1.43: च्लि लुङि। (*cli luṅi*)

cli follows a verb that occurs with endings that replace *luṅ*. *cli* is an abstract suffix, always subject to replacement. The most general rule of substitution concerning this element is

A 3.1.44: च्लेः सिच्। (*cleḥ sic*)

which provides that *sic* replaces *cli,* as in *apākṣīt* of (21). Additional sūtras let other replacements occur for *cli* if *luṅ* has been introduced under particular meaning conditions and

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after particular verbs. By

A 3.1.66: चिण् भावकर्मणोः (च्लेः ते) (*ciṇ bhāvakarmaṇoḥ* [*cleḥ* 44, *te* 60])

ciṇ substitutes for *cli* before the ending *ta* (*te*) introduced on condition that an act alone is to be signified or to signify an object (*bhāvakarmaṇoḥ*), as in *apāci* (< ... *apac-i-ta*) of (22). Among rules providing for other replacements of *cli* are:

A 3.1.45: शल इगुपधादनिटः क्सः। (*śala igupadhād aniṭaḥ ksaḥ*)

A 3.1.55: पुषादिद्युताद्यॢदितः परस्मैपदेषु (अङ्) (*puṣādidyutādyḷditaḥ parasmaipadeṣu* [*ari* 52])

A 3.1.56: सर्त्तिशास्त्यर्त्तिभ्यश्च। (*sarttiśāstyarttibhyaś ca*)

A 3.1.57: इरितो वा। (*irito vā*)

After a verb with penultimate *i ī u ū ṛ ṝ ḷ* (*igupadhāt*) and final *ś ṣ s h* (*śalaḥ*), *ksa* substitutes for *cli*, provided the verb does not condition the use of the initial augment *iṭ* with a following affix (*aniṭaḥ*); e.g. *avikṣat* (< ... *aviś-sa-t*) '(has) entered', from *viśá*. Before parasmaipada suffixes (*parasmaipadeṣu*), *aṅ* replaces *cli* following verbs of the subgroups that begin with *puṣá* and *dyúta* (see 163, 160) as well as verbs marked with *ḷ* (*puṣādidyutādyḷditaḥ*); e.g., *apuṣat* '(has) thrived', *adyutat* '(has) shone', *agamat* 'went, has gone' (*gamḷ*). The vikaraṇa *aṅ* also follows *sṛ* 'run, flow', *śās* 'instruct, command', *ṛ* 'go', and, optionally (*vā*), any verb marked with *ir* (*iritaḥ*), provided parasmaipada endings follow; e.g., *asarat, aśiṣat* (< ... *aśās-a-t*), *ārat, achidat* '(has) cut' (*chidir*).

237 Ārdhadhātuka affixes (A 3.4.114-116 [63]), on the other hand, regularly do not occur with vikaraṇas. For example, *bhavet* (< ... *bhū-a-yāsṭ* < *bhū-liṅ*) 'should be', with the sārvadhātuka ending *t* as a substitute for *liṅ* by A 3.3.161 (233), is derived with the vikaraṇa *śap*, but *bhūyāt* (< ...

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bhū-yāsst < *bhū-liṅ*) 'may ... be', with the ārdhadhātuka ending *t* as a replacement for *liṅ* by A 3.3.173, lacks this affix. Similarly, *papāca* and *pece*, as in (25)-(26), lack a vikaraṇa before the *liṭ* endings *ṇal, eś*. Not only do such endings fail to condition the use of vikaraṇas, they are contexts for doubling, as provided for in A 6.1.8 (382): before an ending that derives from *liṭ* (*liṭi*), a syllable of a verbal base (*dhātoḥ*) is doubled, provided it is not an abhyāsa syllable (*anabhyāsasya*: A 6.1.4 [52]).

238 Endings derived from three L-affixes are contexts for adding augments to stems. According to

A 6.4.71: लुङ्लङ्लृङ्क्ष्वडुदात्तः। (*luṅlaṅlṛṅkṣv aḍ udāttaḥ*)

A 6.4.72: आडजादीनाम्। (*āḍ ajādīnām*)

a stem (*aṅgasya*: A 6.4.1 [105]) receives a high-pitched vowel (*udāttaḥ*) *á* as initial augment (*aṭ*: A 1.1.46 [17]) if it is followed by endings that replace *luṅ, laṅ, lṛṅ*, but high-pitched *áṭ* (*āṭ*) is added to stems that begin with vowels (*ajādīnām*); *apākṣīt, apāci, apacat, apacyata* of (21)-(24) (230) contain augmented stems followed by endings which derive from *luṅ* and *laṅ*.

239 As I pointed out earlier (235), an ending such as *t* derived from *luṅ* receives the initial augment *iṭ* after a stem with the suffix *sic*. An ending can also be deleted after a particular stem. Thus, as provided for in

A 6..4.104: चिणो लुक्। (*ciṇo luk*)

a suffix is replaced by zero (*luk*: A 1.1.61 [79]) after a stem that ends with *ciṇ* (A 3.1.66 [236]), as in *apāci* (< *apāc-i-ta*) of (22).

240 Pāṇini accounts for pairs of sentences such as (19)-(20) being equivalent utterances by deriving them as alternative expressions of the same relations between the same kārakas and a single act denoted by the same verb. He therefore lets L-affixes follow verbs alternately to signify an agent or an

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object (A 3.4.69 [232]).

In addition, the expression of kārakas by nominal endings is made subordinate to their expression by verbal affixes. A series of sūtras under the heading of

A 2.3.1: **अनभिहिते।** (*anabhihite*)

provides for triplets of endings (*vibhakti*: A 1.4.104 [65, 67]) to occur on condition that given kārakas are to be signified if they are not otherwise signified (*anabhihita*); the locative singular *anabhihite* of this heading is construed with locatives such as *karmaṇi* of subsequent sūtras. Six such rules are

A 2.3.2: **कर्मणि द्वितीया।** (*karmaṇi dvitīyā*)

A 2.3.13: **चतुर्थी सम्प्रदाने।** (*caturthī sampradāne*)

A 2.3.18: **कर्तृकरणयोस्तृतीया।** (*kartṛkaraṇayos tṛtīyā*)

A 2.3.28: **अपादाने पञ्चमी।** (*apādāne pañcamī*)

A 2.3.36: **सप्तम्यधिकरणे च।** (*saptamy adhikaraṇe ca*)

A 2.3.65: **कर्तृकर्मणोः कृति (षष्ठी)** (*kartṛkarmaṇoḥ kṛti* [*ṣaṣṭhī* 50])

These let different triplets of endings occur to signify different kārakas (see 67, 214) as follows:

A 2.3.2: karman: second triplet (*dvitīyā* [sc. *vibhaktiḥ*])

A 2.3.13: sampradāna: fourth triplet (*caturthī*)

A 2.3.18: kartṛ, karaṇa: third triplet (*tṛtīyā*)

A 2.3.28: apādāna: fifth triplet (*pañcamī*)

A 2.3.36: adhikaraṇa: seventh triplet (*saptamī*)

A 2.3.65: kartṛ, karman: endings of the sixth triplet (*ṣaṣṭhī*), if the nominal to which endings are introduced is construed with a term ending in a kṛt affix (*kṛti*: A 3.1.93 [66]).

Further, according to

A 2.3.46: **प्रातिपदिकार्थलिङ्गपरिमाणवचनमात्रे प्रथमा।** (*prātipadikārthaliṅgaparimāṇavacanamātre prathamā*)

A 2.3.47: **सम्बोधने च।** (*sambodhane ca*)

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endings of the first triplet (*prathamā*) are introduced when there is to be signified nothing more (*-mātre*) than a base meaning (*prātipadikārtha*) and a gender (*liṅga*), a measure (*parimāṇa*), or a number (*vacana*), as well as when a term is used in calling (*sambodhane*) what it signifies.

(19a) (230) contains an ending that has replaced *laṭ* introduced to signify an agent. Since this kāraka is thus already signified by a verbal affix, an agent-signifying ending of the third triplet is not introduced after *devadatta,* but an object-signifying ending of the second triplet does follow *odana;* the nominal *devadatta* takes a first-triplet ending by A 2.3.46. In (20a), on the other hand, the verb ending has replaced *laṭ* introduced to signify an object, so that *odana* is not followed by an object-signifying ending of the second triplet, but a third-triplet ending signifying an agent now follows *devadatta;* in this utterance, *odana* takes a first-triplet ending. Other equivalent pairs of active and passive sentences given in 230 are similarly derived.

241 The basic nominal endings with which Pāṇini operates (see 67 with figure B) are given in

A 4.1.2: **स्वौजसमौट्छष्टाभ्याम्भिस्ङेभ्याम्भ्यस्ङसि-भ्याम्भ्यस्ङसोसाम्ङ्योस्सुप्।** (*svaujasamauṭ-chaṣṭābhyāmbhisṅebhyāmbhyasṅasibhyāmbhyas-ṅasosāmṅyossup*)

Sūtras such as those considered in 240 provide for the occurrence of particular triplets of these endings under stated conditions. Which ending of each triplet is selected for a given derivation is determined by the number of things designated, in accordance with A 1.4.21-22 (234): endings called *ekavacana, dvivacana,* and *bahuvacana* (A 1.4.103 [67]) respectively occur when one, two, and many things are denoted.

242 Basic nominal endings are subject to operations in various contexts. Thus, after a stem in *-a,* the ending *ṭā* --- as in *devadatta-ā* of (20a) and so on --- is replaced by *ina* (A 7.1.12[492]). The final vowel of a nominal and the vowel of the

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ending *am* are both replaced by the former (A 6.1.107 [533]); e.g., the two contiguous vowels of *odana-am* are both replaced by the first *a*.

Although Pāṇini thus operates with both basic verb endings and basic nominal endings, there is a major difference between the two kinds of endings: Pāṇini has to introduce basic verb endings as substitutes for abstract L-affixes (232), but he does not have to operate with abstract affixes replaced by nominal endings, which are introduced directly.

243 Once affixation rules have taken effect and operations have applied to endings consequent on their deriving from particular L-affixes, one has strings like (19a)-(34a) (230), made up of related padas. Contextual operations, both grammatical and phonological, then apply within such padas, as summarized below:

odana-am > *odanam* (A 6.1.107 [see 242])

devadatta-ā > *devadatta-ina* (A 7.1.12) > *devadattena* (A 6.1.87 [528])

pac-s-t > *pāc-s-t* (A 7.2.3 [412]) > *apāc-s-t* (A 6.4.71[238]) > *apāc-s-it* (A 7.3.96 [440]) > *apāk-s-it* (A 8.2.30 [544]) > *apākṣīt* (A 8.3.59 [563])

pac-i-ta > *pāc-i-ta* (A 7.2.116 [417]) > *apāc-i-ta* > *apāci* (A 6.4.104 [239])

pac-a-t > *apacat, pac-ya-ta* > *apacyata*

pac-a > *pac-pac-a* (A 6.1.8 [382]) > *pa-pac-a* (A 7.4.60 [383]) > *papāc-a* (A 7.2.116)

pac-e > *pac-pac-e* > *pece* (A 6.4.120 [458])

sma-s > *sma* (A 2.4.82 [307])

pac-sya-ti > *pak-sya-ti* > *pakṣyati, pac-sya-te* ... > *pakṣyate*

pac-a-yāsst > *pac-a-īyssṭ* (A 7.2.80 [442]) > *pac-a-īyt* (A 7.2.79) > *pac-a-īt* (A 6.1.66 [522]) > *pacet, pac-ya-sīysta* > *pac-ya-īyta* > *pac-ya-īta* > *pacyeta*.

244 Contextual phonological operations then take effect at and across pada boundaries:

devadattas o- > *devadattaR o-* (A 8.2.66 [551]) > *devadattay o-* (A 8.3.17 [557]) > *devadatta o-* (A 8.3.19 [558])

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odanam p- > *odanaṁ p-*(A 8.3.23 [559]) > (optionally) *odanam p-* (A 8.4.59 [580])
devadattena o- > *devadattenau-*(A 6.1.88 [529])
-audanas p- > *- audanaR p-* > *- audanaḥ p-*(A 8.3.15 [557])
-audanas a- > *-audanaR a-* > *-audanaü a-*(A 6.1.113 [525]) >
-audano a-(A 6.1.87 [528]) > *-audano-*(A 6.1.109 [533]).

245 The derivational procedure that serves to describe sentences like (19)-(34) (230) accounts as well for other sentences, which can concern other kārakas. For example, consider

(36) देवदत्तः स्थाल्यां काष्ठैरोदनं पचति। (*devadattaḥ sthālyāṁ kāṣṭhair odanaṁ pacati*) 'Devadatta is cooking rice with firewood in a pot.'

(37) देवदत्तेन स्थाल्यां काष्ठैरोदनः पच्यते। (*devadattena sthālyāṁ kāṣṭhair odanaḥ pacyate*) 'Rice is being cooked by Devadatta with firewood in a pot.'

(38) देवदत्तो ग्रामादागच्छति। (*devadatto grāmād ā gacchati*) 'Devadatta is coming from the village.'

(39) देवदत्तोऽश्वात्पतति। (*devadatto'śvāt patati*) 'Devadatta is falling from the horse.'

(40) देवदत्त उपाध्यायाय गां ददाति। (*devadatta upādhyāyāya gāṁ dadāti*) 'Devadatta is giving a cow to his teacher.'

(36)-(37) concern Devadatta cooking rice in a pot (loc.sg. *sthālyām*) using pieces of wood (instr. pl. *kāṣṭhais*) to do the cooking. By virtue of serving as the locus in which rice is cooked, the pot (*sthālī*) is classed as adhikaraṇa (A 1.4.45 [214]), so that *sthālī* is followed by a seventh-triplet nominal ending (A 2.3.36 [240]), specifically the ekavacana ending *ṅi*(A 1.4.22 [234]): *sthālī-i* > *sthālī-ām* (A 7.3.116 [497]) > *sthālī-āām* (A 7.3.112 [499]) > *sthālī-ām* (A 6.1.90 [529]) > *sthālyām* (A 6.1.77 [125]). The pieces of firewood serve as means of cooking, so that they are assigned to the karaṇa category (A 1.4.42). Hence, *kāstha* is followed by an ending of

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the third triplet (A 2.3.18), specifically the bahuvacana ending *bhis* (A 1.4.21): *kāṣṭha-bhis* > *kāṣṭha-ais* (A 7.1.9 [492]) > *kāṣṭhais* (A 6.1.88 [529]).

The village of (38) functions as point of departure in relation to the act of coming performed by Devadatta, so that it is assigned to the apādāna category (A 1.4.24). Therefore, *grāma* is followed by the ekavacana ending of the fifth triplet (A 2.3.28): *grāma-as* > *grāma-āt* (A 7.1.12 [492]) > *grāmāt* (A 6.1.101 [532]). Although the horse referred to in (39) could be moving, it functions as point of departure in respect of falling, so that it too is classed as apādāna, and *aśva* takes the ending *ñasi*: *aśva-as* > *aśva-āt* > *aśvāt*.

The cow (*go*) and teacher (*upādhyāya*) referred to in (40) are assigned respectively to the karman and sampradāna categories (A 1.4.49, 32), so that *go* and *upādhyāya* are followed by the ekavacana endings of the second and fourth triplets (A 2.3.2, 13): *go-am* > *gām* (A 6.1.93 [530]), *upādhyāya-e* > *upādhyāya-ya* (A 7.1.13 [492]) > *upādhyāyāya* (A 7.3.102 [482]).

To derive (36) and (38)-(40), *laṭ* is introduced after *ḍupacaṣ* and *gamḷ´* (with the preverb *ā*: *ā gam* 'come'), *pátá*, and *ḍudāñ* to signify an agent. This affix is then replaced by the ending *tip*, which conditions the introduction of the vikaraṇa *śap*. Before this suffix, the *-m* of *gam* is replaced by *ch* (A 7.3.77 [434]): *gam-a-ti* > *gach-a-ti* > *gatch-a-ti* (A 6.1.73 [536]) > *gacchati* (A 8.4.40 [574]). The verb *dā* belongs to the major group that begins with *hu*, so that *śap* is dropped after it (A 2.4.75 [158]); consequent on this deletion, however, the verb is subject to doubling (A 6.1.10 [382]): *dā-ti* > *dā-a-ti* > *dā-ti* > *dā-dā-ti* > *dadāti* (A 7.4.59 [383]).

246 If one uses dice (*akṣa*) to gamble with, they serve as means (*sādhakatama*) of performing this act. However,

(41) अक्षैर्दीव्यति। (*akṣair dīvyati*)

(42) अक्षान् दीव्यति। (*akṣān dīvyati*)

can both be used to say that someone is gambling (*dīvyati*)

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with dice. It is therefore not sufficient to have the dice classed as karaṇa by A 1.4.42 (214). This would allow deriving (41), with *akṣair*; as (36) has *kāṣṭhair*; but it would not allow deriving (42), with *akṣān* (acc. pl.). Pāṇini assigns the semantic means (*sādhakatamam*) of gambling denoted by *div* alternately to two kāraka categories, karaṇa and karman (A 1.4.43). Hence, a nominal that refers to such a means of gambling is followed by an ending of either the third or the second triplet (A 2.3.18, 2 [240]). Since many dice are involved in the situation under consideration, the bahuvacana endings *bhis* and *śas* follow *akṣa*: *akṣa-bhis* > *akṣa-ais* > *akṣais*, *akṣa-as* > *akṣās* (A 6.1.102 [532]) > *akṣān* (A 6.1.103).

247 Consider now

(43) पर्णशालायामास्ते। (*parṇaśālāyām āste*)

(44) पर्णशालामध्यास्ते। (*parṇaśālām adhy āste*)

both of which refer to a hut made of leaves (*parṇaśālā*) as a semantic locus (*ādhāra*), a place where someone stays (*ās, adhy-ās* [3sg. pres. ind. *āste*]). By A 1.4.45 (214), the hut of (43) is classed as adhikaraṇa, so that *parṇāśālā* is followed by the ekavacana ending of the seventh triplet: *parṇaśālā-i* > *parṇaśālā-ām* (A 7.3.116 [497]) > *parṇśālā-yāām* (A 7.3.113 [499]) > *parṇaśālāyām* (A 6.1.101 [532]). However, *parṇaśālām* (acc. sg.) of (44) cannot be accounted for in this manner. In accordance with the syntax of such a sentence, Pāṇini assigns the semantic locus of the act denoted by *ās* with the preverb *adhi* to the karman category (A 1.4.46), so that *parṇaśālā* is now followed by an ending of the second triplet (A 2.3.2 [240]): *parṇaśālā-am* > *parṇaśālām* (A 6.1.107 [533]).

248 (45) त्वया सह सुग्रीवः सख्यं करिष्यति। (*tvayā saha sugrīvaḥ sakhyaṁ kariṣyati*)

(46) सख्यस्य तव सुग्रीवः कारकः। (*sakhyasya tava sugrīvaḥ kārakaḥ*)

are related sentences. Both mean 'Sugrīva will make friends with you', and (45) can be used to paraphrase (46) (see 255),

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although the former conveys overtly that the act of making will take place in the future (3sg.fut. *kariṣyati*) and the latter does not. Sugrīva is the agent (*kartṛ* : A 1.4.54 [214]) of making, the object of which is friendship (*sakhya*). Since friendship is assigned to the karman category (A 1.4.49), the base *sakhya* is followed by the second-triplet ending (A 2.3.2 [240]) *am* to account for *sakhyam* in the derivation of (45): *sakhya-am* > *sakhyam* (A 6.1.107 [533]).

Clearly, *sakhyasya* (gen. sg.) of (46) cannot be accounted for in this way, although in this sentence also Sugrīva is spoken of as the agent of making friends, so that here too friendship is the object of making. (46) also has the term *kārakaḥ* instead of *kariṣyati*. Now, endings such as *tip, ta* are not the only affixes that occur with verbs to signify agents and objects. Kṛt affixes (A 3.1.93 [66]) also function in this way. According to

A 3.4.67: कर्तरि कृत्। (*kartari kṛt*)

A 3.4.70: तयोरेव कृत्यक्तखलर्थाः। (*tayor eva kṛtyaktakhalarthāḥ*)

kṛt affixes in general are introduced on condition that an agent is to be signified (*kartari*), but kṛtya affixes (A 3.1.95), *kta*, and affixes with the meanings of *khal* (A 3.3.126 [295]) occur only in the two meanings (*tayor eva*) explicitly given in A 3.4.69 (232): if an object or an act is to be signified; e.g., *kartṛ, kāraka* 'one who makes, does', *kartavya* 'to be made, done', *kṛta* 'made, done', *sukara* 'easily made, done'. *kta* (*ktaḥ*) also occurs to signify an agent (*kartari ca*), provided it is the initial moment of an action that is spoken of (*ādikarmaṇi*):

A 3.4.71: आदिकर्मणि क्तः कर्तरि च। (*ādikarmaṇi ktaḥ kartari ca*)

For example, *prakṛta* can refer to an agent who has begun to do or make something, to an object that someone has begun to make, or to an act that has been started. *kta* is so used also after verbs signifying movement (*gatyartha*, e.g., *gam* 'go':

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gata), objectless verbs (*akarmaka*, e.g., *ās* 'be seated': *āsita*), and *śliṣ* (e.g., *ā-śliṣ* 'embrace' : *āśliṣṭa*), *śī* (*adhi-śī* 'lie on': *adhiśayita*, A I.4.46 [214]), *sthā* (e.g., *adhi-ṣṭhā*: *adhiṣṭhita*), *ās* (e.g., *adhi-ās*: *adhyāsita*, cf. (44) [247]), *vas* (e.g. *anu-vas* 'stay with': *anūṣita*), *jan* (e.g., *anu-jan* 'be born after': *anujāta*), *ruh* (e.g., *ā-ruh* 'mount': *ārūḍha*), *jṝ* (e.g., *anu-jṝ* 'grow old with': *anujīrṇa*), which take objects when used with preverbs:

A 3.4.72: गत्यर्थाकर्मकश्लिषशिङ्स्थासवसजनरुह-
जीर्यतिभ्यश्च। (*gatyarthākarmakaśliṣaśīṅ-sthāsavasajanaruhajīryatibhyaś ca*)

The general rule

A 3.1.133: ण्वुल्तृचौ। (*ṇvultṛcau*)

provides that the kṛt suffixes *ṇvul* (> *aka*: A 7.1.1 [509]) and *tṛc* follow any verb (*dhātoḥ* : A 3.1.91 [66]). The agentive derivate *kṛ-vu* (... > *kāraka*) is a derived nominal base (A 1.2.46 [48]), followed in (46) by the ekavacana member of the first triplet of nominal endings, *su*. Since the derivate *kṛ-vu* contains a verb affix signifying an agent, the base *sugrīva*, which refers to the specific agent in question, does not take an agentive ending; this too is followed by *su*. The friendship which *sakhya* denotes is related in (45)-(46) to the act of making, signified by *ḍukṛñ*. However, instead of a finite verb form like *kariṣyati*, (46) contains a derivate with the kṛt affix *ṇvul*, so that A 2.3.2 (240) does not apply to introduce a second-triplet ending after *sakhya*. Instead, a sixth-triplet (genitive) ending is introduced, by A 2.3.65: *sakhya-as* > *sakhyasya* (A 7.1.12 [492]).

249 In Pāṇini's system, a form such as *pacati*, *pakṣyati*, *kariṣyati* derives from a more abstract item with an L-affix: *pac-laṭ*, *pac-lṛṭ*, *kṛ-lṛṭ*. Moreover, L-affixes are, strictly speaking, members of the kṛt class (A 3.1.93 [66]). It is required, nevertheless, that items such as *pac-laṭ* cooccur with padas like *odana-am*, containing second-triplet endings,

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not with padas that have sixth-triplet endings. Now, although A 2.3.65 (240) lets sixth-triplet nominal endings follow nominals which are construed with derivates formed with kṛt affixes, this is only a general rule, to which the following are exceptions:

A 2.3.69: न लोकाव्ययनिष्ठाखलर्थतृनाम् (*na lokāvyayaniṣṭhākhalarthatṛnām*)

A 2.3.70: अकेनोर्भविष्यदाधमर्ण्ययोः। (*akenor bhaviṣyadādhamarṇyayoḥ*)

These sūtras provide that a sixth-triplet ending does not (*na*) occur with a nominal to signify an agent or an object if the item in question is syntactically connected with terms that have particular kṛt affixes: L-affixes, *u* (e.g., *cikīrṣu* 'wishing to make, to do'), *uka* (e.g., *āgāmuka* 'one who comes to ...'), affixes that form items of the avyaya class (A 1.1.39-40 [54], see (51a) [260]), those of the niṣṭhā set (A 1.1.26 [66]), those with the meaning of *khal* (e.g., *sukara* 'easily made, done': A 3.3.126 [295]), the suffix *tṛn* (A 3.2.135 [290]); *aka,* if this is explicitly introduced on condition that an act is referred to the future (see (51b)), and affixes of the shape *in,* provided these are introduced when an act is referred to the future (e.g., *gamin* 'one who will go') or on condition that an agent is a debtor (*ādhamarṇya*, e.g., *dāyin* '(a debtor) who will give ...': A 3.3.170 290]). A 2.3.65 is itself an exception to A 2.3.2,18. By excluding sixth-triplet endings under the conditions noted, A 2.3.69-70 reallow endings of the second and third triplets to signify agents and objects. For example, *cikīrṣu* is used with terms like *kaṭam* 'mat' (<*kaṭa-am*), and a participle such as *kṛta* 'made, done' is used with terms such as *devadattena.*

A 2.3.69 would not allow genitives such as *rājñaḥ* in *rājño mataḥ* 'honored by the king' and *eṣām* 'of these' in *eṣām bhuktam* 'the place where they eat'. Hence,

A 2.3.67: कर्तरि च वर्तमाने (षष्ठी) (*ktasya ca vartamāne* [*ṣaṣṭhī* 50])

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A 2.3.68: अधिकरणवाचिनश्च्वा (*adhikaraṇavācinaś ca*)

are needed, to reallow sixth-triplet endings after nominals construed with derivates that have the niṣṭhā suffix *kta*, if this affix is used when an action is referred to present time (*vartamāne* : A 3.2.188 [294]) or to signify a locus (*adhikaraṇavācinaḥ*: A 3.4.76 [293]).

250 Of course, not all relations concerned in sentences to be described by means of Pāṇini's derivational system are such as obtain between activities and kārakas. Consider now the phrase *tvayā saha* of (45) (248). The instrumental singular *tvayā* 'you' does not refer here to an agent, as does *devadattena* in (20c) (230), or to an instrument, as does *kāṣṭhais* of (36) (245). Indeed, Rāma, the referent of *tvayā* in (45), is not spoken of as a kāraka in this sentence. He is referred to as secondarily associated with an act (*apradhāna* 'non-principal, subsidiary'), through a direct participant, but not as a direct participant in that act: Sugrīva will form a friendship, and that friendship will be with Rāma. According to

A 2.3.19: सहयुक्तेऽप्रधाने (तृतीया) (*sahayukte'pradhāne* [*tṛtīyā* 18])

an ending of the third triplet (*tṛtīyā*) is introduced after a nominal that refers to an indirect participant (*apradhāne*) and is syntactically connected or connectible with *saha* 'with' (*sahayukte*). In the derivation of (45), then, the third-triplet ending *ṭā* is introduced after the second person pronoun *yuṣmad*: *yuṣmad-ā* > *tvaad-ā* (A 7.2.97 [478]) > *tvad-ā* (A 6.1.97 [531]) > *tvayā* (A 7.2.89).

Sūtras that concern non-kāraka relations may also provide for the occurrence of particular nominal endings on condition that a nominal is construed with one of a particular group of items. Thus,

A 2.3.8: कर्मप्रवचनीययुक्ते द्वितीया

(*karmapravacanīyayukte dvitīyā*)

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A 2.3.9: यस्मादधिकं यस्य चेश्वरवचनं तत्र सप्तमी। (*yasmādadhikaṁ yasya ceśvaravacanaṁ tatra saptamī*)

A 2.3.10: पञ्चम्यपाङ्परिभिः। (*pañcamy apāṅparibhiḥ*)

concern the use of particular endings after nominals construed with elements of the karmapravacanīya class (see A 1.4.83-98 [55]). In general, a second-triplet ending (*dvitīyā*) follows a nominal if this is linked with a karmapravacanīya (*karmapravacanīyayukte*), as in *saṁhitām anu* 'consequent on (the recitation of) the saṃhitā', where *saṁhitām* (< *saṁhitā-am*) is derived with such an ending. However, if the nominal linked to a karmapravacanīya denotes something relative to which something else spoken of is greater (*yasmād adhikam*) or if one speaks of the meaning in question as connected with a master (*yasya ceśvaravacanam*), then an ending of the seventh triplet (*saptamī*) occurs with that nominal; e.g., *adhi devadatte* 'under Devadatta's dominion'. A fifth-triplet ending (*pañcamī*) follows a nominal that is syntactically connected with *apa, ā, ṅ*, or *pari* (*apāṅparibhiḥ*), as in *ā pāṭaliputrāt* 'up to Pāṭaliputra'.

According to

A 2.3.23: हेतौ (तृतीया) (*hetau* [*tṛtīyā* 18])

a third-triplet ending (*tṛtīyā*) occurs with a nominal if a cause is to be signified (*hetau*); e.g., *vidyayā yaśaḥ* 'fame due to knowledge' has *vidyayā* (< ... *vidyā-ā*), with the third-triplet ending *ṭā* after *vidyā*, which here refers to knowledge spoken of as the cause of fame. On the other hand, if the term *hetu* is used (*hetuprayoge*), a sixth-triplet ending (*ṣaṣṭhī*) is used when speaking of a reason or cause, as in *annasya hetoḥ* 'on account of food':

A 2.3.26: षष्ठी हेतुप्रयोगे। (*ṣaṣṭhī hetuprayoge*)

However, if the nominal used to refer to such a cause is a pronominal (*sarvanāmnaḥ*: 53), both sixth- and third-triplet endings (*tṛtīyā ca*) alternately are used with that nominal:

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A 2.3.27: **सर्वनाम्नस्तृतीया च।** (*sarvanāmnas tṛtīyā ca*)

For example: *kasya hetoḥ, kena hetunā* 'on account of what?'

Endings of the fifth triplet (*pañcamī*) follow nominals construed with *anya* 'other', *ārāt* 'far off, near', *itara* 'other', *ṛte* 'without', direction words (*dikśabda*), compounds whose second members contain *añcu* (*añcūttarapada*), and derivates with the suffixes *āc, āhi* (*anyārāditararttedikśabdāñcūttarapadājāhiyukte*):

A 2.3.29: **अन्यारादितरर्त्तेदिक्शब्दाञ्चूत्तरपदाजाहियुक्ते (पञ्चमी)** (*anyārāditararttedikśabdāñcūttarapadājāhiyukte* [*pañcamī* 28])

For example: *anyo devadattāt* 'someone other than Devadatta', *pūrvo grāmāt* 'before the village, east of the village'.

A 2.3.41: **यतश्च निर्धारणम् (षष्ठी सप्तमी)** (*yataś ca nirdhāraṇam* [*ṣaṣṭhī* 38, *saptamī* 36])

A 2.3.42: **पञ्चमी विभक्ते।** (*pañcamī vibhakte*)

concern terms like the genitive and locative plurals *manuṣyāṇām, manuṣyeṣu* in constructions of the types *manuṣyāṇāṁ śūratamaḥ* 'most heroic of men', *manuṣyeṣu śūratamaḥ* 'most heroic among men' and ablatives such as *pāṭaliputrakebhyaḥ* in the construction type *pāṭaliputrakebhyaḥ māthurāḥ āḍhyatarāḥ* 'The inhabitants of Mathurā are richer than those of Pāṭaliputra', all of which involve a setting apart (*nirdhāraṇam*) of one thing from another or within a class. By the first sūtra, either a sixth-triplet ending or an ending of of the seventh triplet follows a nominal referring to something from which (*yataḥ*) another is thus set apart, and A 2.3.42 provides that such a nominal is followed by a fifth-triplet ending in the case that a separation (*vibhakte*) of the two things in question is intended.

251 With respect to all the conditions given in A 2.3.2 and sūtras which follow (240), including rules such as A 2.3.19 (250), there is a remainder (*śeṣa*) of relations. By

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A 2.3.50: **षष्ठी शेषे** (*ṣaṣṭhī śeṣe*)

an ending of the sixth triplet (*ṣaṣṭhī*) follows a nominal when any such residual relation (*śeṣe*) is involved. That is, a genitive ending occurs to signify a relation that holds with respect to something that does not play a role as a direct participant in an act, provided there are no other conditions met, such as a nominal being used in construction with *saha*, which determine the use of other endings. For example, in (17) (229) a king is spoken of as related to his servant, not as bearing any direct relation to an action. By A 2.3.50, a sixth-triplet ending, specifically the ekavacana ending *ṅas* (A 1.4.22 [234]) follows *rājan*: *rājan-as* > *rājn-as* (A 6.4.134 [502]) > *rājñas* (A 8.4.40 [574]). Similarly, in (46) (248) Rāma is spoken of as related to friendship (*sakhyasya tava* 'of your friendship'), so that *yuṣmad* takes a sixth-triplet ending: *yuṣmad-as* ... > *tava* (A 7.2.96 [478])

Remarks.

252 1. Pāṇinīyas, from Kātyāyana on, use *upapadavibhakti* in opposition to *kārakavibhakti*. The latter refers to an ending that signifies a kāraka, the former to an ending the occurrence of which is determined by the use of a nominal with a cooccurring item (*upapada*). The ending in *tvayā* of (45) (see 248, 250) is an upapadavibhakti.

253 2. I have not dealt here with examples such as **मातुः स्मरति** (*mātuḥ smarati*) '... remembers his mother', where an object (*karman*) is considered to bear a residual relation. Such examples and the sūtras which account for them will be discussed in part III.4 of my work.

254 3. Since verb endings are explicitly excluded from the kṛt class (A 3.1.93 [66]), A 2.3.65 (240) could not apply to give padas like *odana-as* (> *odanasya*) in strings such as (19b) (230) once the L-affix is replaced by an ending, even if the rule were

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permitted somehow to give *odana-as* and the like in initial strings with L-affixes. However, participles such as *pacat* (A 3.2.124 [262]) also should occur with padas of the type *odana-am*, not with the type *odana-as*, and such participles do not have verb endings as substitutes for L-affixes. Moreover, allowing *odana-as* in an initial string with *pac-laṭ* and then having *odana-am* in (19b) and so on, once the L-affix is replaced, would let conflicting forms occur in strings which should not conflict. Hence, in A 2.3.69 (249) Pāṇini provides that a sixth-triplet ending does not occur with a nominal that is linked to a term with an L-affix. By A 1.1.56 (100), then, a participial affix like *śatṛ* behaves in the same way as the L-affix *laṭ* it replaces, so that a sixth-triplet ending is not allowed after a nominal construed with a participial form that contains such an affix.

255 4. Example (44) (247) is based on Raghuvaṁśa 1.95: **निर्दिष्टां कुलपतिना स पर्णशालामध्यास्य प्रयतपरिग्रह-द्वितीयः। तच्छिष्याध्ययननिवेदितावसानां संविष्टः कुशशयने निशां निनाय॥**, where Kālidāsa says king Dilīpa passed the night (*niśām ninīya*) resting on a bed of kuśa grass (*saṁviṣṭaḥ kuśaśayane*), accompanied by his wife, after settling in a hut of leaves (*parṇaśālām adhyāsya*) which Vasiṣṭha had indicated to him (*nirdiṣṭām kulapatinā*). Example (46) (248) is taken from Bhaṭṭikāvya 6.71ab: **सख्यस्य तव सुग्रीवः कारकः कपिनन्दनः।**, and (45) is based on Jayamaṅgala's paraphrase of the verse: ... **त्वया सह मैत्रीं करिष्यति॥** (45) and Jayamaṅgala's paraphrase differ only in that I have substituted *sakhyam* for *maitrīm* 'friendship'.

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2.2. Complex sentences.

256 Complex sentences involve two or more related activities. I shall illustrate how Pāṇini accounts for such utterances with examples concerning activities related as follows:

Acts are spoken of as cause and effect in conditional sentences.

Actions performed by the same agent take place in sequence.

In a sentence with a purpose clause or its equivalent, an activity is said to be carried out in order that another act may be performed.

One action serves to characterize how or when another act takes place, and these are spoken of in sentences with participial and absolute constructions; an activity is said to be the reason for performing another, in a sentence with a participial construction.

Verbs are construed with verbs of wishing.

Someone has someone else carry out an activity.

257 (47) **कृष्णं नमेच्चेत्सुखं यायात्।** (*kṛṣṇaṁ namec cet sukhaṁ yāyāt*) 'If one does obeisance to Kṛṣṇa, one attains happiness.'

involves two actions related as cause and effect: doing obeisance (*nam* 'bow, bend') to Kṛṣṇa is said to let one attain (*yā* 'go, reach') happiness (*sukha*). Each of these acts has an object (*karman*: A 1.4.49 [214]), respectively Kṛṣṇa and happiness, and each is performed by a single unspecified agent (*kartṛ* : A 1.4.54). According to A 3.4.69 (232), an L-affix follows each of the verbs to denote an agent, and

A 3.3.156: **हेतुहेतुमतोर्लिङ्।** (*hetuhetumator liṅ*)

specifies which L-affix in particular is introduced when deriving sentences like (47): *liṅ* follows verbs whose meanings are related as cause and effect (*hetuhetumatoḥ*). The derivation of *namet* from *nam-liṅ* proceeds in the same manner as the derivation of *pacet* from *pac-liṅ* (see 235, 243). *yāyāt* differs from *namet* in that *śap* is deleted after *yā*, a

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verb of the second major group (A 2.4.72 [158]): *yā-a-yāsst* > *yā-yāsst* > *yāyāt*. The nominal padas *kṛṣṇam, sukham* are gotten from *kṛṣṇa-am, sukha-am* in the same way as *odanam, sakhyam* are derived from *odana-am, sakhya-am* (see 243, 248). *cet* 'if' is a member of the set that begins with *ca,* so that it belongs to the nipāta class (A 1.4.57 [55]), hence is included in the avyaya set (A 1.1.37 [54]). Therefore, the ending *su* is introduced after *cet* (A 2.3.46 [240]) and then dropped (A 2.4.82 [307]).

258 The following sentences also concern acts related as cause and effect:

(48) यदि सुवृष्टिरभविष्यत्सुभिक्षमभविष्यत्। (*yadi suvṛṣṭir abhaviṣyat subhikṣam abhaviṣyat*) 'If there were to be good rains, there would be plenty of food (but there will not be).'

(49) एधाँश्चेदलप्स्यतौदनमपक्ष्यत्। (*edhāṃś ced alapsyataudanam apakṣyat*) 'If he had gotten firewood, he would have cooked rice.'

However, these involve contrary-to-fact conditions: There will not be good rain (*suvṛṣṭi*), so that there will not be an abundance of food (*subhikṣa*), and the person spoken of in (49) has not found firewood (*edha* [acc. pl. *edhān*]), so that he has not been able to cook rice. According to

A 3.3.139: लिङ्निमित्ते लृङ् क्रियातिपत्तौ (भविष्यति) (*liṅnimitte lṛṅ kriyātipattau* [*bhaviṣyati* 136])

A 3.3.140: भूते च। (*bhūte ca*)

the L-affix *lṛṅ* follows verbs under a condition which determines that *liṅ* is introduced (*liṅnimitte*) --- that is, if related verbs denote acts spoken of as cause and effect (A 3.3.156 [257]) --- when the acts in question are referred either to the future (*bhaviṣyati*) or the past (*bhūte*), provided that these fail to take place (*kriyātipattau*). The meanings of *bhū* 'be, become', *labh* 'obtain', *pac* 'cook, bake' in the situations

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spoken of in (48)-(49) meet these conditions, so that these verbs are followed by *lṛṅ* signifying an agent (A 3.4.69 [232]). After *bhū* and *ḍupacaṣ* in the present instance, this L-affix is replaced by the parasmaipada ending (A 1.3.78 [142]) *tip*, the vowel of which is deleted (A 3.4.100 [400]); the ātmanepada ending *ta* replaces *lṛṅ* after *ḍulabhaṣ* (A 1.3.12 [138]). Since these endings derive from *lṛṅ*, the verbs which precede them take the suffix *sya* (A 3.1.33 [236]): *bhū-sya-t* > *bho-sya-t* (A 7.3.84 [127]) *abho-sya-t* (A 6.4.71 [238]) > *abho-iṣya-t* (A 7.2.35 [145]) > *abhav-iṣya-t* (A 6.1.78 [524]) > *abhaviṣyat* (A 8.3.59 [563]), *labh-sya-ta* > *alabh-sya-ta* > *alapsyata* (A 8.4.55 [578]), *pac-sya-t* > *apac-sya-t* > *apak-sya-t* (A 8.2.30 [544]) > *apakṣyat* (A 8.3.59).

259 Another relation between actions is spoken of in

(50) **स्नात्वा भुङ्क्ते।** (*snātvā bhuṅkte*) 'He bathes before eating.'

The act of bathing (*snā*: gerund *snātvā* 'having bathed, after bathing') precedes eating (*bhuj*). According to

A 3.4.21: **समानकर्तृकयोः पूर्वकाले (क्त्वा)**

(*samānakartṛkayoḥ pūrvakāle* [*ktvā* 18])

ktvā follows a verb (A 3.1.91 [66]) used with reference to one of two acts which have the same agent (*samānakartṛkayoḥ*), the one that takes place at a time before the other (*pūrvakāle*). *ktvā* is a kṛt affix (A 3.1.93), so that *snātvā* is a derived nominal base (*prātipadika*: A 1.2.46 [48]), followed by a nominal ending (A 4.1.1 [105]). However, *snātvā* is also an avyaya (A 1.1.40 [54]), so that the ending of *snātvā-s* is deleted (A 2.4.82 [307]). The form *bhuṅkte* derives from *bhuj-laṭ*.

260 (51) a. **ओदनं भोक्तुं गृहं गच्छति।** (*odanaṁ bhoktuṁ gṛhaṁ gacchati*)

b. **ओदनं भोजको गृहं गच्छति।** (*odanaṁ bhojako gṛhaṁ gacchati*)

both speak of an unspecified agent going (*gacchati*) home (*gṛham* [acc. sg.]) to eat (*bhuj*: inf. *bhoktum*, nom. sg. masc.

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agent noun *bhojakas*) his rice (*odanam*). Eating is the purpose for which this person goes home. By

A 3.3.10: **तुमुन्ण्वुलौ क्रियायां क्रियार्थायाम् (भविष्यति)**
(*tumuṇṇvulau kriyāyāṁ kriyārthāyām* [*bhaviṣyati* 3])

tumun and *ṇvul* (> *aka*: A 7.1.1 [509]) alternately follow a verb whose meaning is referred to the future (*bhaviṣyati*), if this is used with another verb the action denoted by which has as its purpose the act which the first verb signifies (*kriyāyāṁ kriyārthāyām*). To derive (51a,b), then, *laṭ* is introduced after *gam* (*gam-l* > ... *gacchati* [see 245]), but *tumun* or *ṇvul* is allowed to follow *bhuj*. Since *bhuj-tum, bhuj-vu* end in kṛt suffixes, they are derived nominal bases, after which endings occur. Each base takes the first-triplet ending *su*. *bhuj-tum* is an avyaya (A 1.1.39 [54]), so that *su* is dropped after it: *bhuj-tum-s* > *bhoj-tum-s* (A 7.3.86 [127]) > *bhoj-tum* > *bhog-tum* (A 8.2.30 [544]) > *bhoktum* (A 8.4.55 [578]). Moreover, since the derivate with *tumun* is an avyaya, in (51a) *odana* takes an ending of the second triplet, not a sixth-triplet ending (A 2.3.69 [249]). A genitive *odanasya* (< *odana-as*) is also precluded in (51b), because the kṛt suffix of *bhojaka-s* is explicitly introduced on condition that the act denoted by *bhuj* is referred to the future (A 2.3.70). On the other hand, *ṇvul* in *kāraka-s* of (46) (248) is introduced merely to signify an agent, without any particular condition of time reference (A 3.1.133, 3.4.67), although from context and other considerations one can infer that (46) has to do with a future act.

261 (52) **एधानाहर्तुं व्रजति।** (*edhān ā hartuṁ vrajati*) '... is going to fetch firewood.'

is similar to (51a) (260): Someone is now going out (*vrajati*) in order to fetch (*ā hartum*) firewood (*edhān* [acc. pl.]), so that fetching (*ā-hṛ*) is the purpose for which he is going. (52) is related to

(53) **एधेभ्यो व्रजति।** (*edhebhyo vrajati*) '... is going for

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firewood.'

in which *ā-hṛ* is not used. By

A 2.3.14: **क्रियार्थोपपदस्य च कर्मणि स्थानिनः।**

(*kriyārthopapadasya ca karmaṇi sthāninaḥ* [*caturthī* 13])

an ending of the fourth triplet (*caturthī*) follows a nominal to signify an object (*karmaṇi*) of an act denoted by a potentially cooccurring verb that can be construed with a verb denoting an act performed in order to carry out the activity signified by the potentially occurring verb (*kriyārthopapadasya*), provided this verb is not actually used (*sthāninaḥ*). *vraj* of (53) denotes an act performed in order to fetch firewood, but the verb that could be used to signify fetching, as in (52), is not used, so that *edha* now takes the fourth-triplet ending *bhyas*: *edha-bhyas* > *edhebyhas* (A 7.3.103 [482]).

262 A 3.2.124: **लटः शतृशानचावप्रथमासमानाधिकरणे।** (*laṭaḥ śatṛśānacāv aprathamāsamānādhikaraṇe*)

A 3.2.126: **लक्षणहेत्वोः क्रियायाः।** (*lakṣaṇahetvoḥ kriyāyāḥ*)

provide that, contrary to A 3.4.78 (232), *śatṛ* and *śānac* substitute for *laṭ* under particular conditions. These replacements apply if *laṭ* is coreferential with a nominal pada that contains an ending of a triplet other than the first (*aprathamāsamānādhikaraṇe*) and if the verb that *laṭ* follows denotes an act spoken of as a characteristic or a cause (*lakṣaṇahetvoḥ*) with respect to another action (*kriyāyāḥ*). For example,

(54) **यज्ञदत्तो देवदत्तं ग्रामं गच्छन्तमद्राक्षीत्।** (*yajñadatto devadattaṁ grāmaṁ gacchantam adrākṣīt*)

'Yajñadatta saw Devadatta going to the village.'

(55) **शयाना भुञ्जते यवनाः।** (*śayānā bhuñjate yavanāḥ*)

'Yavanas eat while lying down.'

(56) **अधीयानो वसति।** (*adhīyāno vasati*) '... is staying

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while he studies (i.e., in order to do his studies).'

involve participants that take part simultaneously in two activities: (54): Devadatta is at once the agent of going (*gam*), relative to which a village (*grāma*) is object, and the object of seeing (*dṛś*), in which Yajñadatta is agent. (55): Yavanas are simultaneously agents of lying (*śī*) and eating (*bhuj*); their eating is characterized as done while they recline. (56): A certain youth remains (*vas*) in a place to do his studies (*adhi-i* 'study'). Abstract strings from which (54)-(56) are derived contain two agentive L-affixes (A 3.4.69 [232]):

(54a) यज्ञदत्त-स् देवदत्त-अम् ग्राम-अम् गम्-लट् दृश्-लुङ्
(*yajñadatta-s devadatta-am grāma-am gam-laṭ dṛś-luṅ*)

(55a) शी-लट् भुज्-लट् यवन-अस् (*śī-laṭ bhuj-laṭ yavana-as*)

(56a) अधि-स् इ-लट् वस्-लट् (*adhi-s i-laṭ vas-laṭ*)

luṅ (A 3.2.110 [233]) in (54a) signifies an agent relative to seeing, so that *yajñadatta,* which refers to the particular agent in question, takes the first-triplet ending (A 2.3.46 [240]) *su.* The affix of *gam-laṭ* signifies an agent of going, and the second-triplet ending (A 2.3.2) *am* follows *grāma* to denote an object of this action. Since *laṭ* signifies an agent of going here and the particular agent involved is referred to by *devadatta* of *devadatta-am,* the L-affix of *gam-laṭ* in (54a) is coreferential with a pada ending with *am.* By A 3.2.124, then, the parasmaipada affix (A 1.4.99, 1.3.78 [64, 142]) *śatṛ* replaces *laṭ*: *gam-l* > *gam-at.* By A 3.2.126, the ātmanepada affix (A 1.4.100, 1.3.12, 66 [64, 138, 141]) *śānac* substitutes for *laṭ* of *śī-laṭ, bhuj-laṭ, i-laṭ* in (55a) and (56a).

According to

A 3.3.14: लृटः सद्वा। (*lṛṭaḥ sad vā*)

an affix called *sat* (A 3.2.127 [66]) optionally substitutes for *lṛṭ* (*lṛṭaḥ*: A 3.3.13 [233]). This allows for sentences comparable to (54), except that they contain forms such as

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gamiṣyantam (fut. ptcple. acc. sg. masc.) 'going'.

263 A 2.3.69 (249) disallows the use of a sixth-triplet ending signifying an object after nominals construed with terms that contain L-affixes. *Śatṛ* and *śānac* gotten by A 3.2.124, 126 (262) replace *laṭ*, so that they have the status of this affix (A 1.1.56 [100]). Consequently, there is no question of a string derived from (54a) having a genitive form *grāmasya* (< *grāma-as*) because of *grāma* being construed with a term that contains a kṛt suffix (A 2.3.65 [240]). Now, *śatṛ* and *śānac* are indeed kṛt affixes (A 3.1.93 [66]), so that derivates with these items are nominal bases (*prātipadika*: A 1.2.46 [48]), to be followed by nominal endings (A 4.1.1 [105]). Moreover, as *laṭ* of *gam-laṭ* signifies an agent, so does *śatṛ* of *gam-at*, and as *laṭ* of *gam-laṭ* is coreferential with *devadatta-am*, so is *śatṛ* of *gam-at*. Since Devadatta is spoken of simultaneously as agent of going and object of seeing, *gam-at* takes the ending *am* signifying an object (*gam-at-am*) in the same way that *devadatta* is followed by this ending. On the other hand, since the derived nominal bases *śī-āna* and *i-āna* contain *śānac* signifying an agent, they are followed by first-triplet endings, *jas* and *su*: *śī-āna-as*, *i-āna-s*.

264 *Śatṛ* and *śanac* are marked with *ś* to show that they belong to the sārvadhātuka class (A 3.4.113 [63]). They also replace agentive *laṭ* of (54a)-(56a), so that they too signify an agent. Consequently, *śap* is introduced after the verbs which precede these suffixes (A 3.1.68 [157]), then deleted after *śī* and *i* (A 2.4.72 [158]): *gam-a-at-am* > *gach-a-at-am* (A 7.3.77 [434]) > *gatch-a-at-am* (A 6.1.73 [536]) > *gatch-at-am* (A 6.1.97 [531]) > *gatch-ant-am* (A 7.1.70 [488]) > *gatch-aṁt-am* (A 8.3.24 [559]) > *gacch-aṁt-am* (A 8.4.40 [574]) > *gacchantam* (A 8.4.58 [580]), *śī-āna-s* > *śe-āna-as* (A 7.4.21 [419]) > *śay-āna-as* (A 6.1.78 [524]) > *śayānās* (A 6.1.102 [532]), *i-āna-s* > *iyānas* (A 6.4.77 [452]).

265 (57) **अग्निषु हूयमानेषु देवदत्तोऽगमत्** (*agniṣu hūyamāneṣu devadatto'gamat*) 'Devadatta went

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while offerings were being made in the fires.'

also concerns two activities such that one serves to characterize the other: Devadatta left at the time oblations were being offered. The fires (*agni* [loc. pl. *agniṣu*]) referred to in (57) participate directly in the act of offering oblations, as object (*karman*: A 1.4.49 [214]). They are also indirectly related, through this act, with Devadatta's going. By

A 2.3.37: **यस्य च भावेन भावलक्षणम् (सप्तमी)** (*yasya ca bhāvena bhāvalakṣaṇam* [*saptamī* 36])

an ending of the seventh triplet (*saptamī*) follows a nominal if an act connected with what it signifies serves as a means (*yasya bhāvena*) of characterizing another act (*bhāva-lakṣaṇam*). Thus, (57) is derived from

(57a) **अग्नि-सु हु-लट् देवदत्त-स् गम्-लुङ्** (*agni-su hu-laṭ devadatta-s gam-luṅ*)

in which *gam* is followed by *luṅ* signifying an agent relative to going, *laṭ* signifying an object with respect to offering oblations follows *hu*, and *agni* is followed by the seventh-triplet ending *sup* according to A 2.3.37. The object-signifying affix *laṭ* is then replaced (A 3.2.124 [262]) by the ātmanepada affix *śānac*. The nominal base *hu-āna* is coreferential with *agni-su*, and takes the same ending as this. In addition, since *śānac* is here an object-signifying sārvadhātuka affix, *yak* follows *hu* (A 3.1.67 [156]): *hu-ya-āna-su* > *hū-ya-āna-su* (A 7.4.25 [426]) > *hū-yam-āna-su* (A 7.2.82 [439]) > *hū-yam-āne-su* (A 7.3.103 [482]) > *hūyamāneṣu* (A 8.3.59 [563]).

266 (58) **इच्छामि भुञ्जीत भवान्** (*icchāmi bhuñjīta bhavān*)

(59) **इच्छामि भुङ्क्तां भवान्** (*icchāmi bhuṅktām bhavān*)

both mean 'I want you to eat', but they differ in that (58) has the optative *bhuñjīta* (3sg.) and (59) has the corresponding imperative *bhuṅktām* in construction with *iṣ* 'wish' (1sg. pres. ind. *icchāmi*). In

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(60) भोक्तुमिच्छामि। (*bhoktum icchāmi*) 'I want to eat.'

also, *bhuj* is construed with *iṣ,* but here wishing and eating have the same agent. Accordingly,

A 3.3.157: इच्छार्थेषु लिङ्लोटौ। (*icchārtheṣu liṅloṭau*)

A 3.3.158: समानकर्तृकेषु तुमुन्। (*samānakartṛkeṣu tumun*)

provide that *liṅ* and *loṭ* (*liṅloṭau*) alternately follow verbs used with verbs meaning 'wish' (*icchārtheṣu*) and that verbs take the affix *tumun* under the same cooccurrence condition if both related verbs have the same agent (*samānakartṛkeṣu* [*icchārtheṣu*] 'when (the verbs meaning "wish") have the same agent'): *bhuj-liṅ* > *bhuj-ta* (A 3.4.77–78, 1.3.66, 1.4.108, 22 [232, 141, 234]) > *bhuj-sīyṣṭa* (A 3.4.102, 107 [401]) > *bhunaj-sīysta* (A 3.1.78 [157]) > *bhunaj-iyta* (A 7.2.79 [442]) > *bhunaj-īta* (A 6.1.66 [522]) > *bhunj-īta* (A 6.4.111 [456]) > *bhuṁj-īta* (A 8.3.24 [559]) > *bhuñjīta* (A 8.4.58 [580]), *bhuj-loṭ* > *bhuj-ta* > *bhuj-te* (A 3.4.79 [396]) > *bhuj-tām* (A 3.4.90 [398]) > *bhunaj-tām* > *bhunj-tām* > *bhung-tām* (A 8.2.30 [544]) > *bhuṁg-ṭām* > *bhuṁk-tām* (A 8.4.55 [578]) > *bhuṅktām* (A 8.4.58), *bhuj-tum-s* > ... *bhoktum* (see 260). In addition, a sentence like (60) alternates with one that has a form of a desiderative from a verb that denotes the object of wishing, such as *bubhukṣe* 'I wish to eat' (see 279).

267 Consider now how Pāṇini relates noncausative and causative sentences in his derivational system. There are derived verbs formed with the causative affix *ṇic* (A 3.1.26 [281]). Derivates such as *kṛ-i* (> *kār-i*) 'have ... make, do', *pac-i* (> *pāc-i-*) 'have ... cook, bake' are verbs (*dhātu*: A 3.1.32 [47]), so that they can be followed by L-affixes signifying an agent or an object (A 3.4.69 [232]). Causal sentences with such derived verbs are of two general types, depending on whether the agent of an act he is caused to perform is referred to by an instrumental or by an accusative form. For example,

(61) यज्ञदत्तो देवदत्तेनौदनं पाचयते। (*yajñadatto*

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devadattenaudanaṁ pācayate) 'Yajñadatta is having Devadatta cook rice (for Yajñadatta to eat).' is a causal sentence related to (19) (230). The verb *pāci* denotes causing relative to cooking. The causal agent (*hetu*: A 1.4.55 [214]) here is Yajñadatta, and the agent of cooking is Devadatta. In the abstract string from which (61) derives,

(61a) यज्ञदत्त-स्देवदत्त-आओदन-अम्पच्-इ-लट्

(*yajñadatta-s devadatta-ā odana-am pac-i-laṭ*)

pac-i is followed by *laṭ* introduced on condition that an agent is to be signified (A 3.4.69 [232]) relative to causing, and the third-triplet ending *ṭā*, signifying an agent (A 2.3.18 [240]) with respect to cooking, follows *devadatta*.

Similarly, corresponding to

(62) देवदत्तः कुम्भान्करोति। (*devadattaḥ kumbhāṇ karoti*) 'Devadatta makes pots.'

(62a) देवदत्त-स् कुम्भ-अस् कृ-लट् (*devadatta-s kumbha-as kṛ laṭ*)

one has

(63) यज्ञदत्तो देवदत्तेन कुम्भान्कारयते। (*yajñadatto devadattena kumbhān kārayate*) 'Yajñadatta is having Devadatta make some pots.'

(63a) यज्ञदत्त-स्देवदत्त-आकुम्भ-अस्कृ-इ-लट्

(*yajñadatta-s devadatta-ā kumbha-as kṛ-i-laṭ*)

However, (63) alternates with

(64) यज्ञदत्तो देवदत्तं कुम्भान्कारयते। (*yajñadatto devadattaṁ kumbhān kārayate*)

derived from

(64a) यज्ञदत्त-स्देवदत्त-अम्कुम्भ-अस्कृ-इ-लट्

(*yajñadatta-s devadatta-am kumbha-as kṛ-i-laṭ*)

with the second-triplet ending *am* after *devadatta*.

In addition, certain verbs form causatives that regularly occur in a double-accusative construction of the type (64). For

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example:

(65) माणवको ग्रामं गच्छति। (*māṇavako grāmaṁ gacchati*) 'The boy is going to the village.'

(66) माणवकं ग्रामं गमयति। (*māṇavakaṁ grāmaṁ gamayati*) '... has the boy go to the village, sends the boy to the village.'

(67) माणवको धर्मं बुध्यते। (*māṇavako dharmaṁ budhyate*) 'The boy perceives his duty.'

(68) पिता माणवकं धर्मं बोधयति। (*pitā māṇavakaṁ dharmaṁ bodhayati*) The father shows the boy his duty.'

(69) माणवक ओदनं भुङ्क्ते। (*māṇavaka odanaṁ bhuṅkte*) 'The boy is eating rice.'

(70) माता माणवकमोदनं भोजयति। (*mātā māṇavakam odanaṁ bhojayati*) 'The mother is feeding the boy rice.'

(71) शिष्यो वेदं पठति। (*śiṣyo vedaṁ paṭhati*) 'The student is reciting the Veda.'

(72) आचार्यः शिष्यं वेदं पाठयति। (*ācāryaḥ śiṣyaṁ vedaṁ pāṭhayati*) 'The teacher is having the student recite the Veda.'

Further, verbs that do not take objects (*akarmaka* 'objectless') form causative derivates in *-ṇic* construed with accusatives; for example,

(73) देवदत्त आस्ते। (*devadatta āste*) 'Devadatta is seated.'

(74) देवदत्तमासयति। (*devadattam āsayati*) '... is seating Devadatta.'

Terms like *māṇavakam* in (66), (68), (70), *śiṣyam* in (72), and *devadattam* in (74) are of course most straightforwardly derived in the same manner as *grāmam, dharmam, odanam,*

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vedam: from padas with an object-signifying ending *am* of the second triplet. Accordingly, by

A 1.4.52: गतिबुद्धिप्रत्यवसानार्थशब्दकर्माकर्मकाणा-
मणिकर्ता स णौ (कर्म)

(*gatibuddhipratyavasānārthaśabdakarmā-
karmakāṇām aṇikartā sa ṇau* [*karma* 49])

Pāṇini provides that a kāraka assigned to the kartṛ category (A 1.4.54 [214]) with respect to the act denoted by a noncausative verb without *ṇi* (*aṇikartā*) is classed as karman (*sa ... karma*) with respect to what is denoted by the corresponding derivate in *-ṇi* (*ṇau*) --- that is, causation --- if the verb without *ṇi* denotes a movement, perception, or consuming (*gatibuddhi-pratyavasānārtha*), if it denotes an activity whose object is a sound (*śabdakarma*), or one that has no object (*akarmaka*). According to

A 1.4.53: हृक्रोरन्यतरस्याम् (*hṛkror anyatarasyām*)

the agent of the acts signified by *hṛ* 'bear, bring, take' and *kṛ* 'do, make' (*hṛkroḥ*) is optionally (*anyatarasyām*) made the object of causation denoted by the corresponding causative derivates *hṛ-i, kṛ-i*.

Now, if the only purpose of A 1.4.52 were to provide that the kārakas in question belong to the karman category, this sūtra would be redundant. For the agent of going, perceiving, eating, reciting, sitting, and so on is the primary goal of the act of causing, denoted by derivates such as *gami* 'have go, send', *bodhi* 'cause to perceive', *bhoji* 'feed', *pāṭhi* 'have recite', *āsi* 'seat', and such a kāraka is assigned to the karman category by A 1.4.49. In effect, A 1.4.52 serves as a restrictive rule: Only agents (*kartṛ*) of the verbs specified are assigned to the karman class for deriving corresponding causative sentences, and others remain members of the kartṛ category. Thus, *devadatta* in (61a) is followed by the agentive ending *ṭā*, not by the object-signifying ending *am*.

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Remark.

268 In A 2.3.14 (261), Pāṇini speaks of a verb that could possibly be used but does not actually occur: *sthāninaḥ* 'which has a place, a possible occurrence'. However, he does not provide for deleting whole padas, although entire affixes are indeed explicitly deleted in his system. Thus, to derive (53), Pāṇini does not first allow *āhartum* (< *ā-s hṛ-tum-s*) to occur and then have it dropped by a special rule. Similarly, to derive sentences such as (त्वं) पचसि ([*tvaṁ*] *pacasi*) 'You are cooking', Pāṇini does not first allow for a pada *yuṣmad-s* (> ... *tvam*) and then optionally delete this. Instead, he considers such pronominal forms to have a potential occurrence (*sthānini*: A 1.4.105 [234]). Note also that Pāṇini does not operate with any type of what modern linguists call embedding to account for sentences like (54) (262). Such sentences are derived from single complex structures like (54a).

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2.3. Agreement phenomena and feminine affixes.

269 As I pointed out earlier (see 232, 234, 240), Pāṇini's Aṣṭādhyāyī has sūtras whereby L-affixes follow verbal bases to signify an agent or an object, other rules whereby nominal endings are introduced on condition that such kārakas and others are to be signified, and still other sūtras providing for the proper distribution of ekavacana, dvivacana, and bahuvacana sets of endings. Consider now the sentences

(75) देवदत्तः कम्बलं करोति। (*devadattaḥ kambalaṁ karoti*) 'Devadatta is making a blanket'

(76) देवदत्तः शुक्लं कम्बलं करोति। (*devadattaḥ śuklaṁ kambalaṁ karoti*) 'Devadatta is making a white blanket.'

(77) देवदत्तः शुक्लां गामानयति। (*devadattaḥ śuklāṁ gām ā nayati*) 'Devadatta is bringing the white cow.'

For deriving these sentences by Pāṇini's sytem, Devadatta is assigned to the kartṛ category and a blanket (*kambala*) and a cow (*go*) are assigned to the karman category relative to making (*kṛ*) and bringing (*ā-nī*). In each derivation, *laṭ* is introduced to signify a kartṛ (*kṛ-laṭ*), (*nī-laṭ*), a second-triplet nominal ending to signify a karman (*kambala-am, go-am*). As *kambalam* (< *kambala-am*) and *gām* (< *go-am*) contain the ekavacana ending *am*, so do *karoti, nayati*, and *devadattas* have ekavacana endings (*tip, su*), since each of the sentences concerns one kāraka of the kartṛ and karman categories. In addition, elements in these sentences show number and case agreement: *devadattas* and *karoti, ā nayati* agree in containing ekavacana endings; the qualifiers *śuklam* (< *śukla-am*) 'white (acc. sg. masc.)', *śuklām* (< *śuklā-am*) 'white (acc. sg. fem.)' and their qualificands *kambalam, gām* all have the ekavacana ending *am* of the second triplet of nominal endings. The rules considered up to this point take care of such number and case agreement. Pāṇini does not have

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additional rules in his grammar specifically for such concord features.

270 The initial string from which (75) derives contains *kṛ-laṭ*. By virtue of signifying a kartṛ, *laṭ* is here coreferential with *devadatta-s*, which denotes the specific kāraka of the kartṛ category referred to in the sentence. Since there is one such kāraka spoken of, the ekavacana ending *tip* substitutes for *laṭ*, and the ekavacana ending *su* follows *devadatta*. Now, *śukla* and *kambala* are bases with distinct meanings: The former can refer to anything qualified by whiteness, the latter to any blanket. In specific utterances, such as (75), however, both these terms are used with reference to one thing, a blanket qualified as being white and the object (*karman*) of making. The rule which provides for a second-triplet ending to occur when a karman is to be signified (A 2.3.2 [240]), then, lets such an ending occur with all bases in a string that refer to a particular kāraka classed as karman, and the rule that serves to let an ekavacana ending occur when there is one thing to signify applies to provide for the ending *am* with each of these bases. In brief, since Pāṇini lets L-affixes and nominal endings occur with stems under meaning conditions, he can let coreference determine case and number agreement in all such sentences.

271 Terms like *śukla* 'white', *kṛṣṇa* 'black', *guru* 'heavy', *laghu* 'light' can be used to denote properties. One can say, for example, *paṭasya śuklaḥ* 'the white of the cloth', *kambalasya śuklaḥ* 'the white of the blanket'. Such terms can also be used with reference to things qualified by properties, as in (76)-(77) (269). When so used, these items are associated with different genders (*liṅga*), depending on the qualificand in question; for example, *śuklaḥ paṭaḥ* 'white cloth', *śuklaḥ kambalaḥ* 'white blanket', *śuklā gauḥ* 'white cow', *śuklaṁ vastram* 'white cloth, garment', with masculine, feminine, and neuter *śuklaḥ, śuklā, śuklam* (nom. sg.). Moreover, as can be seen from *śukla, śuklā*, some nominal bases take particular affixes when they are used in the feminine (*striyām*). As far

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as concerns bases like *śukla*, which denote properties and things qualified by these properties (*guṇavacana*, see 273), gender agreement depends on the qualificand in question.

Now, Pāṇini has to provide not only for derivates such as *śuklā* (< *śukla-ā*), *kṛṣṇā* (< *kṛṣṇa-ā*), *gaurī* (< *gaura-ī*) 'white', *mahat-ī* 'great', *laghv-ī*, *gurv-ī* but also for feminine derivates such as *ajā* 'she goat' (< *aja-ā*), *kartr-ī* (< *kartṛ-ī*) 'doer, maker, agent', *bhavat-ī* (fem. of *bhavatu* 'you'), *nartakī* (< *nartaka-ī*) 'female dancer', *mayūrī* (< *mayūra-ī*) 'pea hen', *kurū* (< *kuru-ū*) 'female descendant of a Kuru king', from nominals that do not denote properties of things, such as whiteness. The Aṣṭādhyāyī contains a section of rules, headed by A 4.1.3 (107), which introduce affixes after nominal bases (*prātipadika*: A 4.1.1 [105]) on condition that they are used in the feminine (*striyām*). The following are such sūtras:

A 4.1.4: **अजाद्यतष्टाप्।** (*ajādyataṣ ṭāp*)

A 4.1.5: **ऋन्नेभ्यो ङीप्।** (*ṛnnebhyo ṅīp*)

A 4.1.6: **उगितश्च।** (*ugitaś ca*)

A 4.1.20: **वयसि प्रथमे।** (*vayasi prathame*)

A 4.1.21: **द्विगोः।** (*dvigoḥ*)

A 4.1.41: **षिद्गौरादिभ्यश्च (ङीष्)** (*ṣidgaurādibhyaś ca* [*ṅiṣ* 40])

A 4.1.44: **वोतो गुणवचनात्।** (*voto guṇavacanāt*)

A 4.1.63: **जातेरस्त्रीविषयादयोपधात्।** (*jāter astrīviṣayād ayopadhāt*)

A 4.1.66: **ऊङुतः (मनुष्यजातेः)** (*ūṅ utaḥ* [*manuṣyajāteḥ* 65])

The first of these rules provides for the suffix *ṭāp* in derivates of the set that begins with *ajā* (see 203) and after bases that end in *-a* (*at*: A 1.1.70 [85]); e.g., *śukla-ā* (> *suklā*: A 6.1.101 [532]). The next four rules cited provide for the affix *ṅīp* after bases ending in *-r*, *-n* (*ṛnnebhyaḥ*) as well as those

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marked with *u ṛ ḷ* (*ugitaḥ*), after a term used with reference to someone in the first stage of life (*vayasi prathame*), and dvigu compounds; e.g., *kartṛ-ī* (> *kartrī-* : A 6.1.77 [125]), *daṇḍin-ī* 'one who bears a staff', *bhavat-ī, pacant-ī* (< *pacat-ī* [A 7.1.81 (489)], pres. ptcple. with suffix *śatṛ* [see 262]), *kumārī* (< *kumāra-ī*: A 6.4.148 [504]) 'girl', *aṣṭādhyāyī* 'group of eight chapters'. The following three sūtras serve to introduce *ṅīṣ*. This suffix follows bases that end in an affix marked with *ṣ* and members of the set beginning with *gaura* 'white' (*ṣidgaurādibhyaḥ*), as in *nartakī* (*nartaka,* with *ṣvun* [A 3.1.145 [290]), *gaurī.* This suffix also occurs, optionally (*vā*), after a guṇavacana base that ends in *-u* (*utaḥ*); e.g., *laghvī / laghu.* Further, *ṅīṣ* is introduced after a base that denotes a generic (*jāteḥ*) and is not limited to the feminine in that meaning (*astrīviṣayāt*), provided also it does not have a penultimate sound *y* (*ayopadhāt*); e.g., *mayūrī,* but *kṣatriyā* 'female Kṣatriya'. According to A 4.1.66, *ūṅ* follows a base which denotes a class of humans (*manuṣyajāteḥ*) and ends in *-u,* as in *kurū.*

There are feminines like *indrāṇī* 'wife of Indra', such that not only is a feminine affix added to a base but the base itself is augmented. According to

A 4.1.49: **इन्द्रवरुणभवशर्वरुद्रमृडहिमारण्ययवयवन-मातुलाचार्याणामानुक्।** (*indravaruṇabhava-śarvarudramṛḍahimāraṇyayavayavana-mātulācāryāṇām ānuk*)

the following items take the final augment *ānuk* concurrently with the feminine suffix *ṅīṣ*: *indra* 'Indra'; *varuṇa* 'Varuṇa'; *bhava, śarva, rudra, mṛḍa* 'Śiva', *hima* 'snow' (*himānī* 'big snow'), *araṇya* 'forest' (*araṇyānī* 'large forest'), *yava* 'barley' (*yavānī* 'spoiled barley'), *yavana* 'Yavana' (*yavanānī* 'Yavana woman' ['Yavana script', according to commentators]), *mātula* 'maternal uncle', *ācārya* 'teacher'.

There are also nominal bases which, although they have varying referents, do not take feminine affixes. For example,

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ṣaṣ 'six', *pañcan* 'five' do not have separate feminine forms. Further, terms such as *svasṛ* 'sister', *duhitṛ* 'daughter' do not take feminine suffixes. Accordingly,

A 4.1.10: **न षट्स्वस्रादिभ्यः।** (*na ṣaṭsvasrādibhyaḥ*)

provides that a feminine suffix does not (*na*) occur after nominals of the *ṣaṣ* class (A 1.1.24 [60]) and items of the group that begins with *svasṛ* (*ṣaṭsvasrādibhyaḥ*).

272 It is not possible to make the introduction of feminine affixes always contingent on coreference between qualifiers and qualificands. In sentences such as

(78) **भवती किमिच्छति।** (*bhavatī kim icchati*) 'What do you wish?'

(79) **नर्तकी नृत्यति।** (*nartakī nṛtyati*) 'The dancer is dancing.'

the use of *bhavatī, nartakī* does not depend on the occurrence of coreferential nominals. Consider also

(80) **इयं गौः शुक्ला।** (*iyaṁ gauḥ śuklā*) 'This cow is white.'

(81) **भूतमियं ब्राह्मणी।** (*bhūtam iyaṁ brāhmaṇī*) 'This Brāhmaṇa woman is a demon.'

Using western concepts, one would say that *śuklā* in (80) is an adjective in predicate position, as opposed to the attributive adjective *śuklām* in (77) (269), and that the adjective agrees with the noun it modifies, whether it is attributive or predicative. A term such as *bhūta* (nt.) 'demon, ghost', on the other hand, does not show obligatory gender agreement with a grammatical subject when it is used in a predicate, as in (81). However, the concepts of subject and predicate and attributive or predicative use of adjectives are foreign to Pāṇini's system. Nor does Pāṇini make a strict syntactic distinction between nouns and adjectives. Both are members of the class of nominal bases (*prātipadika*), to which are introduced particular affixes.

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Now, as far as the type *śukla, śuklā* is concerned, one could say that such items always show gender agreement with coreferential nominals, just as they agree with these in respect of case and number. In Pāṇini's system, this agreement does not have to be stated formally by rules separate from those already discussed, since it is given that the two nominals in question are coreferential, so that whatever pertains to a nominal used to designate a particular thing pertains to the other. It happens that Sanskrit has particular feminine forms like *śuklā,* which in Pāṇini's derivational system call for affixation rules. Further, the affixes in question occur with nominals whether or not they are of the type *śukla, śuklā*; e.g., *nartakī.* In the case of terms like *nartakī, brāhmaṇī,* it cannot be said that coreference determines gender marking through affixation. If one were to say that any nominal which is coreferential with a feminine is susceptible to being marked as feminine, one would have to allow, wrongly, **bhūtā* instead of *bhūtam* in (81). Accordingly, Pāṇini simply lets particular affixes occur with certain nominals if these are used in the feminine. The affixation rules which provide for this are not put in terms of agreement. Indeed, there are no explicit concord rules for number and gender agreement in the Aṣṭādhyāyī, and Pāṇini's derivational system does not require such rules.

Remarks.

273 1. I have intentionally used the somewhat vague 'in the feminine' to render *striyām* of A 4.1.3 (107). Pāṇini uses *strī, puṁs,* and *napuṁsaka* in ways which could be considered to indicate that he treated gender either as a feature of a nominal or as a property of what a nominal signifies; full details concerning his usage are dealt with in part IV.2 of my work. Pāṇinīyas generally treat gender (*liṅga*) as a property of what a nominal signifies, just as number (*saṅkhyā, vacana*) is considered a semantic property. For example, Patañjali brings

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up on several occasions the principle that guṇavacana terms (*guṇavacacanānāṁ śabdānām* : see 274-275) have different genders and numbers (*liṅgavacanāni*) according to the substrate (*āśrayataḥ*) of the properties in question: A property has whatever gender and number belong to the substance (*dravyam*) in which it resides, as when one says *śuklaṁ vastram* 'white garment', *śuklā śāṭī* 'white śāṭī (a woman's garment)', *śuklaḥ kambalaḥ* 'a white blanket', *śuklau kambalau* 'two white blankets', *śuklāḥ kambalāḥ* 'many white blankets'. [E.g., Bh. I.228.20-21: ... **गुणवचनानां शब्दानामाश्रयतो लिङ्गवचनानि भवन्ति ...,** I.246.19-22: **गुणवचनानां शब्दानामाश्रयतो लिङ्गवचनानि भवन्ति। शुक्लं वस्त्रम् शुक्ला शाटी शुक्लः कम्बलः शुक्लौ कम्बलौ शुक्ला कम्बला इति। यदसौ द्रव्यं श्रितो भवति गुणस्तस्य यल्लिङ्गं वचनञ्च तद्गुणस्यापि भवति।**]

Nevertheless, Pāṇinīyas cannot and do not equate grammatical gender with external characteristic marks (*liṅga*) which serve to show that one is a male (*puṁs*), a female (*strī*) or neither of these (*napuṁsaka*), such as body hair, long hair, etc. They do recognize that a grammarian operates with grammatically pertinent gender. The views they expound will be considered in part IV.2 of my work. In accordance with the above, I shall use 'in the masculine', 'in the feminine', and 'in the neuter' as translations of *puṁsi, striyām,* and *napuṁsake.* Let me note that treating gender as a semantic feature is not so strange as a western linguist might at first be tempted to think. As I have pointed out, Pāṇini lets number --- which no grammarian should hesitate to treat as a semantic property --- determine the choice of particular endings in triplets (**A** 1.4.21-22 [234, 241]), and number agreement is determined by the coreference of items, so that no special rules are required to account for this. In such a context, it makes sense to do without rules for gender

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agreement also, especially since, as I have also noted, one is dealing with a system in which concepts such as subject and predicate do not play a role. One can, then, let gender distinctions also have a semantic status. Of course, such distinctions are not specifically correlated with physical features of males, females, and others, so that a blanket (*kambala*) can be said to be masculine, a śāṭī feminine, and so on.

274 2. The statement **गुणवचनानां शब्दानामाश्रयतो लिङ्ग-वचनानिभवन्ति** (see 273) would have to be made explicitly if Pāṇini's grammatical rules served to explain, by means of a derivational system, only padas (A 1.4.14 [49]) in isolation (*padasaṁskāra*), not padas as related to other padas in utterances (*vākyasaṁskāra*). As Bhartṛhari remarks, in a grammatical explanation which has utterances as its limit (*vākyāvadhike tv anvākhyāne*) a property denoted by a guṇavacana term such as *śukla* is always combined with a thing it qualifies (*nityasaṁsṛṣṭasya guṇasya*) in such a way that it is not distinguished from its substrate (*āśrayaviśeṣeṇātyantam avivekāt*), so that there is always a delimitation of a particular qualified thing as opposed to any other thing (*sarvato vyavacchede*), with the result that there is no mere property denoted in general as a meaning of a guṇavacana term (*sāmānyārthatvam eva na vidyate*). [Vṛtti on VP 1.24c [69.1-2]): **वाक्यावधिकेत्वन्वाख्यानेनियतसंसृष्टस्य गुणस्याश्रयविशेषेणात्यन्तमविवेकात्सर्वतो व्यवच्छेदे सामान्यार्थत्वमेव न विद्यते।**] That is, in the context of a grammar that serves to explain utterances, a term such as *śukla*, if it is used as a qualifier, always refers to a qualified thing, which can also be referred to by a coreferential nominal. Pāṇinian rules introduce nominal endings after bases under certain conditions, which involve relations among the meanings of items in strings to be formed. Combinations of bases and endings, such as *śukla-s*, *śukla-am*, are thus not treated in isolation, and in any string where it is a qualifier a term such

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as *śukla-s* is coreferential with another nominal element. I have omitted details concerning undesirable consequences of adopting the view that padas in isolation are explained through derivation; these will be considered in part IV.2 of my work. For the present, note only that, in his comments on Mahābhāṣya I.246.19-22 (see 273), Kaiyaṭa remarks that the statement *guṇavacanānāṁ śabdānām* ... requires explicitly to be formulated (*vācanika*) under the view that padas alone are explained through derivation (*padasaṁskārapakṣe*). [Pr. II.104: पदसंस्कारपक्षे वाचनिकमेतत्।]

275 3. Pāṇini distinguishes a type of nominals which he called *guṇavacana,* as in A 4.1.44 (271) and elsewhere. These are nominals that denote properties and things qualified by such properties. Pāṇini does not, however, set up a separate syntactic category of nominal bases consisting of what in western terminology would be called adjectives. Instead, he merely specifies in particular instances that given rules apply with respect to guṇavacana elements. Pāṇini also recognizes the distinction between nominals used to signify qualifiers (*viśeṣaṇa*) and qualificands (*viśeṣya*); e.g., A 2.1.57 (313). But he does not thereby set up a separate grammatical category of adjectives. This is understandable in his system: What in western terminology are called nouns and adjectives are subject to the same affixation rules in deriving Sanskrit utterances by letting nominal endings occur after elements, including coreferential nominals.

276 4. Pāṇini also does not recognize a separate syntactic category of adverbs. In (82) उच्चैर्वसति। (*uccair vasati*) '... lives high up', the action qualifier (*kriyāviśeṣaṇa*) *uccais* 'high' occurs. *uccais* is included in the set that begins with *svar*, so that it belongs to the avyaya class (A 1.1.37 [54]), after members of which nominal endings are dropped (A 2.4.82 [307]). The terms *śobhanam* 'well', *suṣṭhu* 'well' in (83) शोभनं पचति। (*śobhanaṁ pacati*), (84) सुष्ठु पचति। (*suṣṭhu pacati*)

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... cooks well' also signify an action qualification. Such items are neither assigned to a class of adverbs nor included in the sets that begin with *svar* and *ca* (A 1.4.57 [55]). On the other hand, they belong to the avyaya class by a gaṇasūtra that accompanies A 1.4.57 (see 206).

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2.4. Derived bases.

2.4.0. Introduction.

277 The derivational system described in Sections 2.1-2.2 involves rules that apply not only with respect to primitive bases but also to derived bases, nominal and verbal (*prātipadika, dhātu*). The Aṣṭādhyāyī includes groups of sūtras which provide for the formation of such derived bases.

2.4.1. Derived verbal bases.

278 Derived verbs (*dhātu*: A 3.1.32 [47]) are either deverbative or denominative, that is, derived from other verbs or from nominal padas (A 1.4.14 [49]). A nominal ending (*sup*) included within such a derivative is generally deleted, by

A 2.4.71: **सुपो धातुप्रातिपदिकयोः (लुक्)** (*supo dhātuprātipadikayoḥ* [*luk* 58])

which provides that zero (*luk*: A 1.1.61 [79]) occurs in place of (A 1.1.49 [90]) a nominal ending (*supaḥ*) that is part of a verb or a nominal base (*dhātuprātipadikayoḥ*).

2.4.1.1. Deverbatives.

279 If the action denoted by a verb V_1 (*dhātoḥ*) is the object (*karmaṇaḥ*) of desiring and both these acts have the same agent (*samānakartṛkāt* 'which has the same agent [as desiring]'), then the affix *san* optionally (*vā*) follows V_1 to form a derived verb used in the meaning 'wish to ..., desire to ...' (*icchāyām*):

A 3.1.7: **धातोः कर्मणः समानकर्तृकादिच्छायां वा (सन्)**

(*dhātoḥ karmaṇaḥ samānakartṛkādicchāyām vā* [*san* 5])

For example, from *ḍukṛñ* with *san* one has the derived verb

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cikīrṣa, forms of which alternate with syntactic complexes made up of *kartum* and forms of *iṣ*; e.g., *cikīrṣati* and *kartum icchati* 'wishes to make, to do'; similarly, (60) *bhoktum icchāmi* (266) and *bubhukṣe* 'I wish to eat' are alternants.

280 *yaṅ* is optionally affixed to a monosyllabic (*ekācaḥ*) verb (*dhātoḥ*) that begins with a consonant (*halādeḥ*) to form a derivate used to signify that the act in question is performed repeatedly, intensively (*kriyāsamabhihāre*):

A 3.1.22: **धातोरेकाचो हलादेः क्रियासमभिहारे यङ् (वा)**

(*dhātorekāco halādeḥ kriyāsamabhihāre yaṅ* [*vā* 7])

For example: *yāyajyate* = *punaḥ punaḥ yajati* '... repeatedly performs sacrificial rites', *jājvalyate* = *bhṛśaṁ jvalati* 'flames intensely'. In addition, *yaṅ* obligatorily (*nityam*) follows a verb of movement if one is to convey crookedness in respect of the movement (*kauṭilye gatau*):

A 3.1.23: **नित्यङ्कौटिल्ये गतौ।** (*nityaṅ kauṭilye gatau*)

For example: *caṅkramyate* 'strides crookedly', *jaṅgamyate* 'goes crookedly'. Similarly, as provided for in

A 3.1.24: **लुपसदचरजपजभदहदशगृभ्यो भावगर्हायाम्।**

(*lupasadacarajapajabhadahadaśagṛbhyo bhāvagarhāyām*)

yaṅ obligatorily follows the following verbs on condition that censure relative to the acts in question (*bhāvagarhāyām*) is to be conveyed: *lup* 'cut, destroy', *sad* 'sit', *car* 'go about', *jap* 'mutter', *jabh* 'yawn', *dah* 'burn', *daś* 'bite', *gṝ* 'swallow'; e.g., *lolupyate* 'uselessly destroys'.

281 A 3.1.25: **सत्यापपाशरूपवीणातूलश्लोकसेनालोमत्वचवर्म-वर्णचूर्णचुरादिभ्यो णिच्**

(*satyāpapāśarūpavīṇātūlaślokasenā-lomatvacavarmavarṇacūrṇacurādibhyo ṇic*)

provides that *ṇic* follows certain nominals (see 283) and verbs of the tenth major group in the dhātupātha (*curādibhyaḥ,*

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see 155, 157, 166). Since no meaning condition is given for the use of *ṇic* with such verbs, this affix is introduced redundantly (see 686-687); e.g., *cori* (< *cur-i*) 'steal'. Similarly, by

A 3.1.30: **कमेर्णिङ्।** (*kamer ṇiṅ*)

ṇiṅ is introduced redundantly after *kam* 'love, desire': *kāmi* (< *kam-i*: *kāmayate*).

On the other hand, according to

A 3.1.26: **हेतुमति च।** (*hetumati ca*)

ṇic also (*ca*) occurs, after any verb, if there is to be signified an act that has a causal agent (*hetumati*, see A 1.4.55 [214]), that is, causation. Examples of causatives and the noncausative verbs from which they are derived have been given in 267.

282 The suffix *yak* as introduced by

A 3.1.27: **कण्ड्वादिभ्यो यक्।** (*kaṇḍvādibhyo yak*)

occurs redundantly after a group of verbs, beginning with *kaṇḍūñ* 'scratch' (*kaṇḍvādibhyaḥ*); e.g., *kaṇḍūya* 'scratch' (*kaṇḍūyati*).

2.4.1.2. Denominatives.

283 A 3.1.25 (281) not only provides that *ṇic* occurs with verbs of the tenth major group in the dhātupāṭha but also that this suffix follows: *satyāp* (*satyāpayati* 'tells the truth, says something is true'), *pāśa* (*vi pāśayati* 'unfetters'), *rūpa* (*ni rūpayati* 'observes'), *vīṇā* (*vīṇayati* 'plays the vīṇā'), *tūla* (*anu tūlayati* 'strokes with the end of a reed'), *śloka* (*upa ślokayati* 'praises with ślokas'), *senā* (*abhi ṣeṇayati* 'advances against ... with an army'), *loma* (*anu lomayati* 'strokes along the grain'), *tvaca* (*tvacayati* 'grabs the skin'), *varman* (*saṁ varmayati* 'girds in armor'), *varṇa* (*varṇayati* 'colors'), *cūrṇa* (*cūrṇayati* 'sprinkles with powder'). The derivates formed thereby are clearly denominative. Nevertheless, *satyāpi* is formally of the

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type *dāpi* 'cause to give', the regular causative formation for primitive verbs in *-ā*, with the final augment *puk* added to the base before *ṇic* (A 7.3.36 [124]).

Other sūtras providing for denominative verbs also differ from A 3.1.25 in that they give specific conditions under which affixes are introduced. For example,

A 3.1.8: **सुप आत्मनः क्यच् (कर्मणः इच्छायाम् वा)**
(*supa ātmanaḥ kyac* [*karmaṇaḥ icchāyāṁ vā* 7])

A 3.1.9: **काम्यच्च।** (*kāmyac ca*)

A 3.1.10: **उपमानादाचारे।** (*upamānād ācāre*)

A 3.1.11: **कर्तुः क्यङ् सलोपश्च।** (*kartuḥ kyaṅ salopaś ca*)

A 3.1.19: **नमोवरिवश्चित्रङः क्यच् (कर्मणः करणे)**
(*namovariväścitraṅaḥ kyac* [*karmaṇaḥ* 15 *karaṇe* 17])

introduce ***kyac***, ***kāmyac***, and ***kyaṅ*** as follows. The first three sūtras let affixes follow nominal padas (*supaḥ*) signifying an object (*karmaṇaḥ*). By A 3.1.8, ***kyac*** follows such a pada if it refers to an object someone desires for himself (*ātmanaḥ*), and the following rule lets *kāmyac* also (*ca*) occur after such a pada under the same conditions. According to A 3.1.10, ***kyac*** is introduced after a pada that refers to an object with which a comparison is made (*upamānāt*), to form a derivate denoting a way of behaving (*ācāre*). The next rule, which introduces ***kyaṅ***, also serves to derive a verb that denotes a way of behaving, only now the affix follows a nominal pada which refers to an agent (*kartuḥ*). Moreover, if the base of the pada in question ends in *-s*, this is also deleted (*salopaś ca*) in the derivate. A 3.1.19 introduces ***kyac*** after a pada that denotes an object (*karmaṇaḥ*), if the nominal base of the pada is *namas* 'bowing, obeisance', *varivas* 'space', or *citra* 'marvel', to form derivates meaning 'do ...' (*karaṇe*). All these rules introduce affixes optionally (*vā*), so that the derivates formed by them alternate with other expressions, as shown in the

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examples below:

(85) a. पुत्रीयति। (*putrīyati*) b. आत्मनःपुत्रमिच्छति। (*ātmanaḥ putram icchati*) '... desires a son for himself'

(86) a. पुत्रकाम्यति। (*putrakāmyati*) b. आत्मनः पुत्रमिच्छति। '... desires a son for himself.'

(87) a. छात्रं पुत्रीयति। (*chātraṁ putrīyati*) b. छात्रं पुत्रमिवाचरति। (*chātraṁ putram ivācarati*) '... treats the student like a son.'

(88) a. काकः श्येनायते। (*kākaḥ śyenāyate*) b. काकः श्येन इवाचरति। (*kākaḥ śyena ivācarati*) 'The crow is acting like a falcon.'

(89) a. नमस्यति देवान्। (*namasyati devān*)

b. नमस्करोति देवेभ्यः। (*namas karoti devebhyaḥ*) '... does obeisance to the gods.'

The endings of padas such as *putra-am, śyena-s, namas-am* in derived verbs like *putra-am-ya, putra-am-kāmya, śyena-s-ya, namas-am-ya* are dropped (A 2.4.71 [278]): *putra-am-ya* › *putra-ya* › *putrīya* (A 7.4.33 [485]), *putra-am-kāmya* › *putrakāmya, śyena-s-ya* › *śyena-ya* › *śyenāya-* (A 7.4.25 [426]), *namas-am-ya* › *namasya*.

2.4.1.3. Special rules for derived verbs.

284. The derived bases gotten by rules such as those considered in Sections 2.4.1-2.4.2 are verbs, so that they are subject to the same operations as apply to primitive verbs in derivations (Sections 2.0-2.2). Thus, they are followed by L-affixes, which are replaced by other affixes, including verb endings, and *yak* or *śap* is introduced after derived verbs when they are accompanied by sārvadhātuka affixes (A 3.1.67-68 [156-157]). Derived verbs nevertheless require special

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rules, in particular with respect to the distribution of ātmanepada and parasmaipada affixes and the occurrence of particular vikaraṇas.

285 *yaṅ* and *kyaṅ* (A 3.1.22-24,11 [280, 283]) are marked with *ṅ* to show that verbs formed with them take agentive ātmanepada affixes (A 1.3.12 [138]): *yāyajyate, caṅkramyate, loḷupyate, śyenāyate*. In addition, derivates with *kyac, kāmyac* have agentive parasmaipada affixes in accordance with A 1.3.78 (142). Such markings and general rules cannot, however, account for the distribution of ātmanepada and parasmaipada affixes with all derived verbs, so that special rules are also required. Two such sūtras are A 1.3.74, 62 (139-140), which concern causatives and desideratives.

286 The suffix *yaṅ* (*yaṅaḥ*) is replaced by zero (*luk*) before *ac* (*aci*), as in *loḷuva* (see 98):

A 2.4.74: यङोऽचि च (लुक्) (*yaṅo'ci ca* [*luk* 58])

By A 3.1.43 (236), *cli* is introduced after any verb, if the verb occurs with endings that replace *luṅ*, and this applies in the case of derived verbs formed with *ṇic*. Moreover, if the endings in question replace *luṅ* introduced on condition that an action or an object is to be signified, *cli* is then replaced by *sic* (A 3.1.44), as in the passive *akārayiṣātām* (3du.) '... have been made'. Before agentive endings, on the other hand, *caṅ* substitutes for *cli* following a derivate with *ṇic*. According to

A 3.1.48: णिश्रिद्रुस्रुभ्यः कर्तरि चङ् (*ṇiśridrusrubhyaḥ kartari caṅ*)

caṅ replaces *sic* followed by an ending that signifies an agent (*kartari*), after verbs in *-ṇi* as well as after *śri* 'lean on, resort to, depend on', *dru* 'run', and *sru* 'run, flow' (*ṇiśridrusrubhyaḥ*); e.g., *acīkarat* (< ... *kāri-a-t*) '... had ... do, make'. The penultimate (*upadhāyāḥ*) vowel of a stem such as *kār*, which is followed by *ṇic* at one time, is replaced by a short vowel (*hrasvaḥ*) before *caṅ* (*caṇi*), as in *acīkarat* (3sg. caus. aor., see 387):

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A 7.4.1: **णौ चङ्युपधाया ह्रस्वः।** (*ṇau caṅy upadhāyā hrasvaḥ*)

Derived verbs also take a particular affix with *liṭ* (A 3.2.115 [233]). By

A 3.1.35: **कास्प्रत्ययादाममन्त्रे लिटि।** (*kāspratyayād ām amantre liṭi*)

if *liṭ* follows (*liṭi*), the afix *ām* is introduced after *kās* 'cough' and verbs formed with affixes (*kāspratyayāt*), except in the domain of Vedic mantra usage (*amantre*). The suffix that thereby follows *ām* is deleted (A 2.4.81 [408]). Now, the L-affix *liṭ* belongs to the kṛt class (A 3.1.93 [66]), so that an item that ends with this affix is a nominal base (*prātipadika*: A 1.2.46 [48]). Accordingly, an item that ends in *-ām* after *liṭ* has been dropped also is a prātipadika (A 1.1.62 [103]), after which a nominal ending will occur (A 4.1.1 [105]); e.g., *kṛ-i-ām-s* (> ... *kārayām*). In addition, as stated in

A 3.1.40: **कृञ्चानुप्रयुज्यते लिटि।** (*kṛñ cānuprayujyate liṭi*)

a form of *kṛ* (*kṛñ*) is used after (*anuprayujyate*) a derivate with *-ām* and is itself followed by *liṭ* (*liṭi*). That is, derivates such as *kārayām, lolūyām* (< *lolū-ya-ām*) are followed by perfect forms of *kṛ*: *ḍukṛñ* is an independent verb, which takes both ātmanepada and parasmaipada endings in agentive forms (A 1.3.72, 78 [139, 142]), as does also a causative such as *kāri* (A 1.3.74). Accordingly, forms like *kārayāñ cakāra, kārayāñ cakre* '... had ... do or make something' are accounted for in terms of how the derived verb and the postposed verb regularly behave. On the other hand, there are instances such as *lolūyāñ cakre,* from the intensive *lolūya,* which are not so simply accounted for: The derived verb *lolūya* takes only ātmanepada affixes in agentive forms, and postposed *kṛ* should behave in the same manner when used with this and similar derivates. Hence, Pāṇini provides that postposed *kṛñ* (*kṛño'nuprayogasya*) has ātmanepada affixes in

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accordance with what holds for the accompanying derived verb with the affix *ām* (*āmpratyayavat*):

A 1.3.63: **आम्प्रत्ययवत्कृञोऽनुप्रयोगस्य।**

(*āmpratyayavat kṛño'nuprayogasya*)

See also 139–140.

Remarks.

287 1. Denominative verbs were called *subdhātu* or *nāmadhātu*, terms already certainly established by the time of Kātyāyana, who uses both (e.g., vt. 1 on A 6.1.64 [*subdhātu*], vt. 4 on A 6.1.3 [*nāmadhātu*]). In A 6.1.92: **वा सुप्यापिशलेः।** (529), Pāṇini uses *sup* (loc. sg. *supi*) with reference to denominative verbs, so that it is probable that *subdhātu* was used of such verbs already in his time, if not also earlier.

288 2. I have used 'causation' with reference to an act which has a causal agent (*hetumati*: A 3.1.26 [281]), although this is to be understood as a general term covering a wide semantic area. To Pāṇinīyas, and doubtless already for Pāṇini himself, the activity performed by a causal agent (*hetu, prayojakakartṛ*) could be of various kinds: commanding an inferior do something (*preṣaṇa*), requesting a superior to do something (*adhyeṣaṇa*), providing, bringing about what is necessary for something to be done (*samarthācaraṇa*). [E.g., VP 3.7.125: **प्रेषणाध्येषणे कुर्वंस्तत्समर्थानि चाचरन्। कर्त्तैव विहितां शास्त्रे हेतुसंज्ञाम्प्रपद्यते॥**] Details are considered in part III.4 of my work.

2.4.2. Derived nominal bases.

2.4.2.1. Derivates with kṛt affixes.

289 As I pointed out earlier (66), affixes other than verb endings, introduced after verbs by sūtras of the section headed

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by A 3.1.91, belong to the kṛt class (A 3.1.93), which includes a subset of affixes, called *kṛtya* (A 3.1.95). Kṛt affixes are introduced under both meaning and cooccurrence conditions of several kinds. In addition, derivates with such affixes are both independent elements and items obligatorily combined with related items to form compounds. In general, kṛt affixes are introduced on condition that an agent is to be signified (A 3.4.67 [248]), but kṛtya affixes, *kta*, and suffixes with the meanings attributed to *khaL* are regularly introduced if an act or an object is to be signified (A 3.4.70). Moreover, time references also play a role in the use of particular kṛt affixes.

290 A 3.1.133 (248) provides for the use of either *ṇvuL* or *tṛC* after any verb. The rule gives no condition for introducing these affixes, so that only the general condition given in A 3.4.67 applies: these suffixes occur if an agent is to be signified. Other agentive kṛt affixes occur with particular verbs. For example,

A 3.1.134: **नन्दिग्रहिपचादिभ्यो ल्युणिन्यचः।**

(*nandigrahipacādibhyo lyuṇinyacaḥ*)

provides that *lyu*, *ṇini*, and *ac* respectively (A 1.3.10 [91]) occur with verbs of the groups --- given in gaṇas that accompany the sūtra --- whose first members are *nandi* 'gladden', *grah* 'seize, grasp', and *pac* 'cook, bake'; e.g., *nandana* (< *nandi-ana*) 'son', *grāhin* 'one who seizes', *paca* 'one who cooks'. By

A 3.1.135: **इगुपधज्ञाप्रीकिरः कः।** (*igupadhajñāprīkiraḥ kaḥ*)

ka follows verbs with penultimate *i-*, *u-*, *ṛ-*, or *ḷ-* vowels (*igupadha*), *jñā* 'know', *prī* 'please', and *kṝ* 'strew, scatter', as in *budha* 'wise', *jña* 'one who knows' (< *jñā-a*: A 6.4.64 [451]), *priya* 'dear' (< *prī-a*: A 6.4.77 [452]), *kira* 'one who strews' (< *kṝ-a-*: A 7.1.100 [423]). And according to

A 3.1.137: **पाघ्राध्माधेट्दृशः शः (उपसर्गे)**

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(*pāghrādhmādheṭdṛśaḥ śaḥ* [*upsarge* 136])

the suffix *śa*, a member of the sārvadhātuka class (A 3.4.113 [63]), follows *pā* 'drink', *ghrā* 'smell', *dhmā* 'blow', *dheṭ* 'suck', *dṛś* 'see, look' used with a preverb (*upasarge*): *utpiba* 'one who drinks up' (*piba* < ... *pā-a-a*: A 3.1.68, 7.3.78 [157, 437]), *vijighra* 'one who sniffs about', *uddhama* 'one who blows up something with air', *uddhaya* 'one who sucks', *vipaśya* 'one who looks about'. These sūtras do not specify any meaning conditions, so that the affixes in question are allowed to occur under the general condition that an agent is to be signified. Similarly,

A 3.1.140: **ज्वलितिकसन्तेभ्यो णः (विभाषा)**

(*jvalitikasantebhyo ṇaḥ* [*vibhāṣā* 139])

lets the agentive affix *ṇa* optionally (*vibhāṣā*) follow verbs of the subgroup that starts with *jval* and ends with *kas* (see 160).

Other agentive kṛt suffixes are introduced under more specific meaning conditions. With the additional condition that the agent in question be a professional, an artisan (*śilpini*), *ṣvun* is introduced after verbs in general, *thakan* after *gā* 'sing':

A 3.1.145: **शिल्पिनि ष्वुन्** (*śilpini ṣvun*)

A 3.1.146: **गस्थकन्** (*gas thakan*)

For example, *nartaka* (< ... *nṛt-vu*) 'dancer', *gāthaka* 'singer'. By

A 3.3.170: **आवश्यकाधमर्ण्ययोर्णिनिः**

(*āvaśyakādhamarṇyayor ṇiniḥ*)

ṇini follows a verb if the agent to be signified is qualified as necessarily performing an act or as a debtor (*āvaśyakādhamarṇyayoḥ*); e.g., *avaśyaṅkārin* 'one who necessarily will do or make something', *śataṁ dāyī* '... will give back one hundred ... (that he owes)'.

There is a section of sūtras, headed by

A 3.2.134: **आक्वेस्तच्छीलतद्धर्मतत्साधुकारिषु**

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(*ā kves tacchīlataddharmatatsādhukāriṣu*)

which extends through a pair of rules (A 3.2.177-178) that introduce ***kvip*** (*ā kveṃ*). Kṛt affixes provided for by rules of this section occur on condition that the agent in question peforms an action as part of his nature, habitually (*tacchīla*) or as a duty (*taddharma*), or that he performs an act well (*tatsādhukārin*). As provided for in

A 3.2.135: **तृन्।** (*tṛn*)

tṛn occurs with any verb under these conditions, as in *kar-tṛ* (< *kṛ-tṛ*) 'one who does or makes ...' Other affixes occur, under the same conditions, with particular verbs. For example, by

A 3.2.141: **शमित्यष्टाभ्यो घिनुण्।** (*śamity aṣṭābhyo ghinuṇ*)

ghinuṇ occurs after the eight verbs of the subgroup that begins with *śámi* (*śamity aṣṭābhyaḥ*: 163). According to

A 3.2.154: **लषपतपदस्थाभूवृषहनकमगमशॄभ्य उकञ्।** (*laṣapatapadasthābhūvṛṣahanakamagamaśṝbhya ukañ*)

ukañ occurs with *laṣ* 'desire' (*lāṣuka*), *pat* 'fall, fly' (*pātuka*), *pad* 'go, fall' (*pāduka*), *sthā* 'be in place, remain' (*sthāyuka*), *bhū* 'be, become' (*bhāvuka*), *vṛṣ* 'rain' (*vārṣuka*), *han* 'strike, kill' (*ghātuka*), *kam* 'love, desire' (*kāmuka*), *gam* 'go' (*gāmuka*), *śṝ* 'destroy' (*śāruka*).

A 3.2.175: **स्थेशभासपिसकसो वरच्।** (*stheśabhāsapisakaso varac*)

A 3.2.176: **यश्च यङः।** (*yaś ca yaṅaḥ*)

introduce ***varac*** after *sthā* (*sthāvara*), *īś* 'have power, be able' (*īśvara*), *bhās* 'shine' (*bhāsvara*), *pis* 'move, penetrate' (*pesvara*), *kas* 'move, open' (*kasvara*) as well as (*ca*) after the derivate in *-yaṅ* (*yaṅaḥ*) formed from *yā* 'go' (*yāyāvara*, see 102).

291 Certain kṛt affixes are introduced on condition that an act

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(*bhāva*, see 228) or a kāraka other than an agent is to be signified. A 3.3.18-19 (111, 114) introduce *ghañ* after any verb under these conditions; e.g., *pāka* 'cooking' (< ... *pac-a* : A 7.2.116, 7.3.52 [417, 431]). Other derivates are formed from particular verbs with different affixes. Thus,

A 3.3.56: **एरच्।** (*er ac*)

A 3.3.57: **ऋदोरप्।** (*ṛdor ap*)

A 3.3.59: **उपसर्गेऽदः।** (*upasarge'daḥ*)

introduce *ac* after verbs that end in *i*-vowels (*eḥ*), *ap* after verbs ending in *-ṛ* or *u*-vowels (*ṛdoḥ*) and after *ad* 'eat' used with a preverb (*upasarge* : A 1.4.59 [55]) ; e.g., *caya, kara, stava, praghasa* from *ci* 'collect, pick, heap', *kṝ* 'strew', *stu* 'praise', *pra-ad* 'eat voraciously' (A 2.4.38 [380]). According to

A 3.3.88: **ह्वितः क्त्रिः।** (*ḍvitaḥ ktriḥ*)

A 3.3.89: **ट्वितोऽथुच्।** (*ṭvito'thuc*)

a verb marked with *ḍu* (*ḍvitaḥ*) takes the affix *ktri* and *athuc* follows a verb marked with *ṭu* (*ṭvitaḥ*); e.g., *paktri* 'cooking', in *paktrima* 'which has been made by cooking, baking' (A 4.4.20 [359]), *vepathu* 'trembling', from the verbs *ḍupacāṣ, ṭuvépṛ*. After *yaj* 'reverence, perform a rite, offer a sacrifice' *yāc* 'request, pray', *yat* 'exert oneself, make an effort', *vich* 'go', *prach* 'ask', *rakṣ* 'protect, keep', the affix *naṅ* is introduced:

A 3.3.90: **यजयाचयतविच्छप्रच्छरक्षो नङ्।**

(*yajayācayatavicchapraccharakṣo naṅ*)

For example: *yajña* (< *yaj-na*: A 8.4.40 [574]) 'rite', *praśna* (< *pratch-na*: A 6.4.19 [430]) 'question'.

In addition, some kṛt affixes are conditioned by the designation of an act qualified in a particular way. For example, A 3.3.44 (115) provides for *inuṇ* to form derivates denoting encompassing acts. Moreover, a gender is a possible qualifier conditioning the use of particular affixes. Thus, A 3.3.94 (114) specifies *striyām* 'feminine (see 273). Consider

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also action nouns such as *hasita* 'laughing', *karaṇa* 'doing, making'. Such derivates are neuter. Accordingly,

A 3.3.114: **नपुंसके भावे क्तः।** (*napuṁsake bhāve ktaḥ*)

A 3.3.115: **ल्युट् च।** (*lyuṭ ca*)

give as conditions for the occurrence of *kta* and *lyuṭ* (> *ana*: A 7.1.1 [509]) not only that an act is to be signified but that this be qualified as neuter (*napuṁsake bhāve*). Further, specific affixes occur with particular verbs under such qualified conditions. For example, the conditions that apply in A 3.3.94 hold also for

A 3.3.103: **गुरोश्चहलः (अ)** (*guroś ca halaḥ* [*a* 102])

A 3.3.104: **षिद्भिदादिभ्योऽङ्।** (*ṣidbhidādibhyo'ṅ*)

The first of these sūtras introduces *a* after verbs with final consonants (*halaḥ* [abl. sg.]) preceded by a heavy vowel (*guroḥ*: A 1.4.11-12 [37]). The second rule introduces *aṅ* after verbs marked with *ṣ* and members of the group that begins with *bhid* 'split, break' (*ṣidbhidādibhyaḥ*); e.g., *īhā* 'desire, effort' (*īh-a* > *īh-a-ā-* > *īhā-*: A 4.1.4, 6.1.101 [271, 532]), *jṝ-a* (> ... *jarā*: A 4.1.4, 7.3.84, 6.1.101 [271, 127, 532]), *bhid-a* (> ... *bhidā*: A 4.1.4, 6.1.101), from *īha* 'strive', *jṝṣ* 'age', *bhidir*. And by

A 3.3.102: **अ प्रत्ययात्।** (*a pratyayāt*)

under the same conditions, *a* follows a verb that ends in an affix (*pratyayāt*), that is, a derived verb; e.g., *cikīrṣā* 'desire to make, do', *lolūyā* 'intense, constant cutting'. On the other hand, *yuc* (> *-ana*) occurs following derived verbs in *-ṇi* and the primitive verbs *ās* 'be seated', *śrath* 'loose' (*ṇyāsa-śranthaḥ*):

A 3.3.107: **ण्यासश्रन्थो युच्।** (*ṇyāsaśrantho yuc*)

For example: *kāraṇā*, action noun to the causative *kāri*, and *āsanā* 'being seated', *śranthanā* 'letting loose'.

292 A 3.1.96 (121) simply provides that the kṛtya affixes *tavyat*, *tavya*, and *anīyar* follow verbs. Since no other conditions are given, these suffixes are allowed to occur with any

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verb under the general conditions stated in A 3.4.70 (248). Certain kṛtya affixes, however, are used under more specific conditions. For example, A 3.1.97 (122) provides for *yat* after vowel-final verbs. Similarly, according to

A 3.1.98: **पोरदुपधात्(यत्)** (*por adupadhāt* [*yat* 97])

A 3.1.124: **ऋहलोर्ण्यत्।** (*ṛhalor ṇyat*)

yat follows a verb that ends in a labial stop (*poḥ*) and has short *a* for its penultimate sound (*adupadhāt*), but verbs that end in *ṛ*- vowels and consonants (*ṛhaloḥ*) take *ṇyat*; e.g., *labhya* 'which is to be obtained', *kārya* 'which is to be done', *vācya* 'which is to be said'. Further, by

A 3.1.125: **ओरावश्यके।** (*or āvaśyake*)

a verb that ends in an *u*-vowel (*oḥ*) takes the kṛtya suffix *ṇyat* if there is the additional meaning condition 'necessarily' (*āvaśyake*); e.g., *lāvya* 'necessarily to be cut'.

293 Unlike L-affixes (A 3.4.69 [232]), kṛt affixes are introduced on condition that kārakas other than agent and object are to be signified (cf. A 3.3.19 [111]). For example, *kta* serves to derive nominals that denote a locus (*adhikaraṇa*: A 1.4.45 [214]), from verbs denoting static acts (*dhrauvya*), movement (*gati*), and consuming (*pratyavasāna*):

A 3.4.76: **क्तोऽधिकरणे च ध्रौव्यगतिप्रत्यवसानार्थेभ्यः।**

(*kto' dhikaraṇe ca dhrauvyagati-pratyavasānārthebhyaḥ*)

lyuṭ forms derivates signifying instruments (*karaṇa*: A 1.4.42) and loci (*karaṇādhikaraṇayoḥ*):

A 3.3.117: **करणाधिकरणयोश्च (ल्युट्)**

(*karaṇādhikaraṇayoś ca* [*lyuṭ* 115])

E.g., *āsita* 'place where sitting takes place', *yāta* 'place where going takes place', *bhukta* 'place where eating takes place', *vraścana* 'instrument for hewing', *dohanī* 'pail in which milk is put'. After the verbs *ṛ* 'move', *lū* 'cut', *dhū* 'shake', *sū* 'impel', *khan* 'dig', *sah* 'bear', *car* 'go about', the suffix *itra* is

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introduced to form derivates denoting instruments:

A 3.2.184: **अर्त्तिलूधूसूखनसहचर इत्रः।**

(*arttilūdhūsūkhanasahacara itraḥ*)

This accounts for *aritra* 'oar', *lavitra* 'sickle', *dhavitra* 'fan', *savitra* 'means of impelling' *khanitra* 'spade', *sahitra* 'means of enduring, overcoming', *caritra* 'foot, leg'.

Indeed, the system of derivation with kṛt affixes lacks strict restrictions to such a degree that Pāṇini must not only have a sūtra A 3.3.19: **अकर्तरि च कारके संज्ञायाम्।** (111) in his grammar but must also provide, in

A 3.3.113: **कृत्यल्युटो बहुलम्।** (*kṛtyalyuṭo bahulam*)

that kṛtya affixes and *lyuṭ* are allowed to occur variously (*bahulam*). Thus, although derivates with kṛtya affixes usually denote objects or acts (A 3.4.70 [248]), *snānīya*, with *anīyar* (A 3.1.96 [121]) after *snā* 'bathe', refers to an instrument, as in *snānīyaṁ cūrṇam* 'powder with which one bathes'; and *dānīya* can be used of someone to whom one gives sometning, as in *dānīyo brāhmaṇaḥ* 'A Brāhmaṇa to whom one gives'. Again, *bhojana*, with *lyuṭ* after *bhuj*, can signify not only eating but also an object that is eaten, food.

294 Time references and modalities also serve as conditions for the occurrence of kṛt affixes. *kta* and *ktavatu* (*niṣṭhā*: A 1.1.26 [66]) are regularly introduced when an activity is referred to the past (*bhūte*):

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A 3.2.102: **निष्ठा (भूते)** (*niṣṭhā* [*bhūte* 84])

For example,

(90) **देवदत्त ओदनं पक्ववान्।** (*devadatta odanaṁ pakvavān*)

(91) **देवदत्तेनौदनः पक्वः।** (*devadattenaudanaḥ pakvaḥ*)

alternate with (21) and (22) respectively (see 230): *pakvavat* (nom. sg. masc. *pakvavān*), *pakva* (nom. sg. masc. *pakvaḥ*) derive from participles in which *ktavatu*, *kta* follow *pac* (*pac-ta* > *pak-ta* > *pakva*: A 8.2.30, 52 [544, 549]).

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In certain cases, *kta* is also used when an act is referred to the present (*vartamāne*): after verbs with the marker *ñi* (*ñitaḥ*) and verbs meaning 'intend, wish' (*mati*), 'know' (*buddhi*), 'honor' (*pūjā*):

A 3.2.187: **ञीतः क्तः (वर्तमाने)** (*ñitaḥ ktaḥ* [*vartamāne* 123])

A 3.2.188: **मतिबुद्धिपूजार्थेभ्यश्च।** (*matibuddhi-pūjārthebhyaś ca*)

For example: *dhṛṣṭa* 'bold' (*ñidhṛṣā́*), *īpsita* 'desired, intended', *vidita* 'known', *sammata* 'honored' are used with present reference, of someone who is overly bold, something one now desires or knows, and someone now held in honor.

Not only do certain modalities serve to condition the use of particular kṛt affixes, as they do the use of certain L-affixes, but formations of both types can alternate. Thus, in speaking to someone who should marry a certain girl because he merits this, one can use

(92) a. **भवान्कन्यां वहेत्।** (*bhavān kanyāṁ vahet*) 'You should marry the girl.'

b. **भवता कन्या वोढव्या।** (*bhavatā kanyā voḍhavyā*) 'The girl should be taken in marriage by you.'

c. **भवान्कन्याया वोढा।** (*bhavān kanyāyā voḍhā*) 'You should marry the girl.'

(92a) has the optative *vahet* (< ... *vah-liṅ*) construed with *kanyām* (< *kanyā-am*), the ending of which is introduced to signify an object (A 2.3.2 [240]), but (92b) has *voḍhavyā* (nom. sg. fem.), with the kṛtya suffix *tavya* (< ... *vah-tavya-ā-s*), used coreferentially with *kanyā*, and (92c) has the agent noun form *voḍhā* (nom. sg. masc.), with the affix *tṛc*, and the genitive *kanyāyāḥ* (A 2.3.65). Accordingly, in

A 3.3.169: **अर्हे (लिङ्) कृत्यतृचश्च।** (*arhe* [*liṅ* 168] *kṛtyatṛcaś ca*)

Pāṇini provides that both *liṅ* and (*ca*) kṛtya affixes and *tṛc*

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are used if the agent in question is one who merits (*arhe*) performing the act spoken of.

295 Particular kṛt suffixes serve to form derivates that occur in complex sentences. For example, *snātvā, bhoktum, bhojakaḥ, āhartum* of (50), (51), (60), (52) (259-261, 266) contain such affixes. For deriving terms like *bhoktum, bhojaka* of (50), moreover, cooccurrence conditions are used: A 3.3.10 lets *tumun* and *ṇvul* follow a verb V_1 if this is used with another verb V_2 the meaning of which is an action whose purpose is performing the act denoted by V_1. V_2 is a cooccurring item (*upapada*). Now, A 3.3.10 contains the locative *kriyāyām kriyārthāyām* 'action that has an action as its purpose', used with reference to the meaning of such a cooccurring verb. According to

A 3.1.92: **तत्रोपपदं सप्तमीस्थम्।** (*tatropapadaṁ saptamīstham*)

such a cooccurring item, referred to by a locative form (*saptamīstham*) in a rule of the section headed by A 3.1.91 (*tatra* 'in this'), is called *upapada*. The following sūtras also involve such upapada items:

A 3.2.1: **कर्मण्यण्** (*karmaṇy aṇ*)

A 3.2.2: **ह्वावामश्च।** (*hvāvāmaś ca*)

A 3.2.3: **आतोऽनुपसर्गे कः।** (*āto'nupasarge kaḥ*)

A 3.2.15: **अधिकरणे शेतेः (अच्)** (*adhikaraṇe śeteḥ* [*ac* 9])

A 3.2.58: **स्पृशोऽनुदके क्विन्।** (*spṛśo'nudake kvin*)

A 3.2.59: **ऋत्विग्दधृक्स्रग्दिगुष्णिगञ्चुयुजिक्रुञ्चां च।** (*ṛtvigdadhṛgsragdigusṇigañcuyujikruñcāṁ ca*)

A 3.2.61: **सत्सूद्विषद्रुहदुहयुजविदभिदच्छिदजिनीराजामुपसर्गेऽपि क्विप्** (*satsūdviṣadruhaduhayujavidabhidacchidajinīrājām upasarge'pi kvip*)

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A 3.2.85: **करणे यजः (भूते णिनिः)** (*karaṇe yajaḥ* [*bhūte* 84, *ṇiniḥ* 78])

A 3.2.87: **ब्रह्मभ्रूणवृत्रेषु क्विप् (कर्मणि हनः)** (*brahmabhrūṇavṛtreṣu kvip* [*karmaṇi hanaḥ* 86])

A 3.2.90: **सोमे सुञः (कर्मणि क्विप्)** (*some suñaḥ* [*karmaṇi* 86, *kvip* 87])

A 3.2.91: **अग्नौ चेः।** (*agnau ceḥ*)

A 3.3.92: **उपसर्गे घोः किः।** (*upasarge ghoḥ kiḥ*)

A 3.3.93: **कर्मण्यधिकरणे च।** (*karmaṇy adhikaraṇe ca*)

A 3.3.126: **ईषद्दुःसुषु कृच्छ्राकृच्छ्रार्थेषु खल्।** (*īṣadduḥsuṣu kṛcchrākṛcchrārtheṣu khal*)

The first three rules introduce affixes to verbs used with upapadas denoting objects of the actions in question (*karmaṇi*). By A 3.2.1, *aṇ* generally can follow any verb; the next rule provides that this suffix occurs also (*ca*) with *hvā* 'call, challenge', *vā* 'weave' (*hvāvāmaḥ*), *mā* 'measure; but according to A 3.2.3 other verbs in *-ā* (*ātaḥ*), provided they are not used with a preverb (*anupasarge*), take the affix *ka*. These sūtras account for derivates such as *-kāra, -hvāya* (< *-hvā-a*: A 7.3.33 [439]), *-vāya, -pa* (< *pā-a*: A 6.4.64 [451]) in *kumbha-kāra* 'pot maker', *svarga-hvāya* 'one who calls out to heaven', *tantu-vāya* 'thread weaver', *ṇṛ-pa* 'king, protector of men'.

A 3.2.15 provides that *ac* follows a verb construed with an upapada signifying a locus (*adhikaraṇe*), as in *śaya* (< *śī-a*: A 7.3.84, 6.1.78 [127, 524]) of *kha-śaya* 'one who lies in heaven'.

A 3.2.58 introduces *kvin* after *spṛś* 'touch' construed with a nominal other than *udaka* 'water'; e.g., *ghṛta-spṛś* 'one who touches ghee'. A 3.2.59 gives certain ready-made derivates with *kvin*, not all of which involve upapadas: *ṛtvij* 'a priest', *dadhṛṣ* 'daring', *sraj* 'garland', *diś* 'direction', *uṣṇih* (name of a particular meter). The rule also lets *kvin* follow the verbs *ancu* 'move (towards)', *yuj* 'join, yoke', and *krunc*

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'curve'. By A 3.2.61, *kvip* is introduced to the verbs *sad* 'sit', *sū* 'give birth to', *dviṣ* 'hate', *druh* 'wish harm to someone', *duh* 'milk', *yuj, vid* 'know', 'occur', *bhid* 'split', *chid* 'cut', *ji* 'conquer, be victorious', *nī* 'lead, guide', and *rāj* 'shine' construed with nominals, including preverbs (*upasarge'pi*). Both *kvin* and *kvip* are deleted (A 6.1.67 [409]).

The next four sūtras include also a condition of time reference: The act signified by the verb to which an affix is added must be referred to the past (*bhūte*). By A 3.2.85, *ṇini* (*ṇiniḥ*) follows *yaj* (*yajaḥ*) construed with a term referring to an instrument (*karaṇe*); e.g., *agniṣṭoma-yājin* 'one who has performed the Agniṣṭoma rite (as a means of accomplishing desired fruits)'. According to A 3.2.87, *kvip* is affixed to *han* 'strike, kill' construed with any of three upapadas referring to objects (*karmaṇi*): *brahman* 'Brahman', *bhrūṇa* 'foetus', *vṛtra* 'Vṛtra', as in *brahma-han* 'one who has killed a Brahman', *bhrūṇa-han* 'one who has killed a foetus', *vṛtra-han* 'slayer of Vṛtra'. A 3.2.90-91 introduce *kvip* to two verbs construed with specific nominals referring to objects: *suñ* and *ci* in construction with *soma* and *agni*, as in *soma-sut* (< *-su-v̇*: A 6.1.67, 71[409, 394]) 'one who has pressed out Soma juice', *agni-cit* 'one who has set up the sacrificial fires'.

The next two sūtras introduce *ki* after verbs of the ghu class (*ghoḥ*: A 1.1.20 [51]) under the conditions stated in A 3.3.18-19 (111). Any verb of the set takes this suffix if it is used with a preverb (*upasarge*), as in *antar-dhi* (< *-dhā-i*) 'disappearing'. In addition, the affix follows a verb construed with an upapada that signifies an object (*karmaṇi*) of the act in question, to form a derivate which denotes a locus (*adhikaraṇe*); e.g., *jala-dhi* 'ocean', interpreted as a term signifying something in which water is set.

According to A 3.3.126, *khal* follows verbs construed with *īṣat* ('slightly'), *dus* ('badly, hardly'), *su* ('well, easily') used to connote difficulty and ease (*kṛcchrākṛcchrārtheṣu*), as in *īṣat-kara, su-kara* 'easily made, done', *duṣ-kara* 'hard to make, do', which refer to objects (*karman*: A 3.4.70 [248]).

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As shown in the examples given, these affixes form derivates which occur only in compounds (A 2.2.19 [315]).

Remarks.

296 1. Pāṇini not only introduces particular verbal affixes to form derived nominal bases by rules of his grammar, he also recognizes a group of affixes, beginning with *uṇ* (*uṇādayaḥ*), which are not introduced by rules of the Aṣṭādhyāyī but which serve to form derived nominal bases. Pāṇini explicitly refers to these affixes in his grammar. A 3.3.1: **उणादयो बहुलम् (वर्तमाने)** (*uṇādayo bahulam* [*vartamāne* 3.2.123]), 3.3.2: **भूतेऽपिदृश्यन्ते।** (*bhūte'pi dṛśyante*), 3.3.3: **भविष्यति गम्यादयः।** (*bhaviṣyati gamyādayaḥ*) concern these affixes and their time references: *uṇ* etc. (*uṇādayaḥ*) are introduced variously (*bahulam*), if the act denoted by a verb is referred to the present, current time (*vartamāne*); these affixes appear (*dṛśyante* 'are seen') also when the time reference is past (*bhūte'pi*); and derivates of the set beginning with *gamin* ('one who will go') have future reference (*bhaviṣyati*). The base *gamin* is derived with the uṇādi suffix *ini* (US 4.6: **गमेरिनिः** [*gamer iniḥ*]); this is not otherwise provided for by any rule of the Aṣṭādhyāyī. Elsewhere in his grammar, Pāṇini deals briefly with the kārakas uṇādi affixes designate. A 3.4.73: **दाशगोघ्नौ सम्प्रदाने।** (*dāśagoghnau sampradāne*), 3.4.74: **भीमादयोऽपादाने।** (*bhīmādayo'pādāne*) concern the derivates *dāśa* 'one to whom something is given, one who is honored', *goghna* 'a guest, for whom a cow is killed', and a set of derivates beginning with *bhīma* 'one whom people are afraid of'. The first two are derived to signify sampradānas, and members of the set beginning with *bhīma* signify apādānas. In A 3.4.75: **ताभ्यामन्यत्रोणादयः।** (*tābhyām anyatroṇādayaḥ*),

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Pāṇini then states that affixes of the set beginning with *uṇ* occur to signify kārakas other than these two (*tābhyām anyatra*). This sūtra covers the general use of uṇādi affixes. In addition, *bhīma* itself is derived with the uṇādi suffix *mak*, which also enters into the formation of *bhīṣma* (US 1.147: भियः षुव्वा (मक्) [*bhiyaḥ ṣug vā* [*mak* 144]). Now, in works such as the Aṣṭādhyāyī, affixes are not merely listed; they are provided for, under various conditions, by rules. A mere list of affixes, beginning with *uṇ*, divorced from grammatical rules providing for their occurrence, would be an anomoly in the Indian context as known to us from works that have been handed down. It is therefore probable, though not provable definitively, that the affixes in question were part of at least a partial grammar known to Pāṇini. It is true, nevertheless, that the groups of uṇādisūtras available to us cannot be attributed to any predecessor of Pāṇini. Additional details concerning uṇādi affixes and rules that introduce them will be dealt with in connection with pertinent sūtras of the Aṣṭādhyāyī.

297 2. As noted in 291, some kṛt affixes are introduced on condition that an act (*bhāva*) is to be signified, thus accounting for nomina actionis such as *pāka*. L-affixes also are introduced on condition that an act is to be signified (A 3.4.69 [232]), thus accounting for forms such as *āsyate* in (9) (138). Pāṇinīyas distinguish between two varieties of bhāva in connection with these. One, termed *ābhyantara bhāva* ('internal bhāva'), is the meaning of a verbal base itself, an act viewed in progress. The other, termed *bāhya bhāva* ('external bhāva'), is what an action noun signifies. This variety of bhāva is said to behave like a substance (*dravyavat*). That is, a nomen actionis such as *pāka* can be used in a sentences such as पाको वर्तते (*pāko vartate*) 'Cooking is taking place', where it denotes a kāraka. (See, for example, Bhāṣya II.57.7-12, 145.10, 15-18, 177.12, 18-21 [on A 3.1.67, 3.3.19, 3.4.67]; full details are considered in part IV.1 of my work.)

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298 3. The set referred to by *bhidādi* in A 3.3.104 (291) is not a subset of the seventh major group in the dhātupāṭha (155). Indeed, it cannot be, since the rule should account not only for *bhidā, chidā,* from verbs of this group, but also for derivates such as *vidā,* from *vid* 'know', which belongs to the second major group. *bhidādi* in A 3.3.104 refers to a gaṇa that accompanies the sūtra, and this gaṇa contains derivates *bhidā* etc., with the affix that is introduced by the rule (cf. 203).

2.4.2.2. Subordination and time references of derivates.

299 Consider now the sentence

(93) देवदत्तेन ग्रामं गच्छता भुक्तम्। (*devadattena grāmaṁ gacchatā bhuktam*) 'Devadatta ate while he was going to the village.'

The term *bhuktam* (*bhukt-a* < *bhuj-ta*: A 3.2.102 [294]) refers to an action performed in the past. The act signified by *gam* in *gacchatā* (*gacchat* < ... *gam-laṭ*: A 3.2.124 [262]) here is also referred to the past: Devadatta's going to the village is spoken of as taking place at the time he ate. Now, eating is the main act referred to in (93), which can be an answer to the question देवदत्तेन कदा भुक्तम्। (*devadattena kadā bhuktam*) 'When did Devadatta eat?' Accordingly, it is possible to say that, although *laṭ* of *gam-laṭ,* from which *gacchat* derives, is introduced if an action is referred to current time (A 3.2.123 [233]), in sentences such as (93), where a verb is connected with another and is subordinate, *laṭ* contextually has the time reference of the main verb. Similarly, although the suffix in *-yājin* of *agniṣṭoma-yājin* is introduced on condition that the act in question is referred to past time (A 3.2.91 [294]), in

(94) अग्निष्टोमयाजी पुत्रोऽस्य जनिता। (*agniṣṭomayājī putro'sya janitā*) 'He will have a son who will have performed the Agniṣṭoma.'

agniṣṭomayājī refers to someone who will exist at a future

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time. Here the time reference is the same as that of *janitā* 'will be born'. Pāṇini accounts for such usages by providing that the affixes (*pratyayāḥ*) that are introduced under certain conditions of time reference occur also when their verbs are connected with other verbs (*dhātusambandhe*):

A 3.4.1: धातुसम्बन्धेप्रत्ययाः। (*dhātusambandhe pratyayāḥ*)

Remark.

300 Pāṇinīyas agree that in a sentence such as (93) one action --- here eating --- is the main act and the other qualifies this. The time reference of the principal verb is followed by the subordinate verb. Details of what Pāṇinīyas say about this will be treated under A 3.4.1 in part IV.1 of my work. Commentators also note that, although A 3.4.1 is part of the large section headed by A 3.1.1 (15), so that the term *pratyaya* could be understood in the sūtra, Pāṇini again states *pratyayāḥ* explicitly in order to include in the scope of A 3.4.1 affixes that are not introduced after verbs (A 3.1.91 [66]). Thus, one can say गोमानासीत्। (*gomān āsīt*) '... was rich in cows', with the preterital form *āsīt* (< *as-laṅ*) and a form of *gomat*, with the taddhita suffix *matup*, which is introduced (A 5.2.94 [346]) under a condition of present time reference. In view of where A 3.4.1 is actually stated, I have nevertheless considered the rule here.

2.4.2.3. Compounds.

2.4.2.3.0. Introduction.

301 Rules of the section headed by A 2.1.3 (26) serve to derive compounds (*samāsa*), which are generally formed from two or more nominal padas (A 1.4.14 [49]). That an item terminating in a nominal ending (*sup*) combines with another such item (*saha supā*) to form a compound is provided for by

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A 2.1.4: (सुप्) सह सुपा। ([*sup* 2] *saha supā*)

Four major kinds of compounds are derived by rules of the following subsections: *avyayībhāva*: A 2.1.5-2.1.21, *tatpuruṣa*: A 2.1.22- 2.2.22, *bahuvrīhi*: A 2.2.23-28, *dvandva*: A 2.2.29. The tatpuruṣa class includes two subtypes, called *dvigu* (A 2.1.52, 23) and *karmadhāraya* (A 1.2.42).

Compounds are also of two general types, alternating and obligatory. Alternating compounds are those which alternate with strings containing the padas from which the compounds are derived. For example, *rāja-puruṣa* 'king's servant' (A 2.2.8, see below) alternates with a string: The nominative singular *rājapuruṣo* can be substituted for *rājñaḥ puruṣo* in (17) (229). Both such a final string and the compound derive from a posited string *rājan-as puruṣa-s* (see 221). Obligatory compounds (*nityasamāsa*) in turn are of two kinds. First, there are compounds which do not correspond to strings of actual usage (*laukika vākya*) formed from the padas posited to derive the compounds. For example, corresponding to *kumbha-kāra* 'pot maker' (A 3.2.1, 2.2.19 [295, 315]) there is no final string **kumbhānāṁ kāraḥ*, derived from *kumbha-ām kāra-s* (A 2.3.65 [240]), as there is a final string *kumbhānāṁ kartā*, with a form of a derivate in *ṭṛc* (A 3.1.133 [248]). The agent noun *-kāra* is not independently used, and a posited string containing this derivate in construction with *kumbha-ām* serves only to derive the compound *kumbha-kāra*. Second, though there may be a possible final string of padas corresponding exactly to the items included in a compound, if the two do not correspond semantically, the compound is obligatory. For example, *khaṭvārūḍha* (lit. 'one who has climbed into bed') is derived from a string *khaṭvā-am ārūḍha-s*, from which one could also derive *khaṭvām ārūḍhaḥ*. The connection between such a final string and the compound is broken, however, when *khaṭvārūḍha* comes to be semantically specialized, used of an intemperate person, one who does not have the patience to wait for marriage until his teacher has

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properly dismissed him from his studies or who sleeps in a bed, instead of on the ground as prescribed by custom, during the time of his studies at his teacher's home.

Alternating compounds are derived according to rules headed by

A 2.1.11: **विभाषा।** (*vibhāṣā*)

which provides that padas optionally (*vibhāṣā*: A 1.1.44 [31]) combine to form compounds. One such rule is

A 2.2.8: **षष्ठी।** (*ṣaṣṭhī*)

which serves to derive tatpuruṣa compounds such as *rāja-puruṣa*.

This sūtra simply says that an item which ends in a sixth-triplet (*ṣaṣṭhī*) nominal ending (*sup*) combines with an item which also terminates in a nominal ending (A 2.1.4). Now consider the string

(95) **भार्या राज्ञः पुरुषो देवदत्तस्य।** (*bhāryā rājñaḥ puruṣo devadattasya*),

derivable from

(95a) **भार्या-स् राजन्-अस् पुरुष-स् देवदत्त-अस्**

(*bhāryā-s rājan-as puruṣa-s devadatta-as*)

in which *bhāryā-s* 'wife' is linked to *rājan-as* and *puruṣa-s* 'man' is connected with *devadatta-as*. If A 2.2.8 provided simply that a pada with a sixth-triplet ending combines with an item terminating in a nominal ending, one could derive *rājapuruṣa* by this sūtra from *rājan-as puruṣa-s* of (95a). This should not be. For A 2.2.8 serves to derive compounds that alternate with corresponding strings, so that *rāja-puruṣaḥ* and *rājñaḥ puruṣaḥ* should indeed be equivalent. But *rājan-as* and *puruṣa-s* in (95a) are not connected with each other, so that such equivalence cannot hold here. In order to have compounds appropriately derived, therefore, Pāṇini states his composition rules under the heading of A 2.1.1: **समर्थः पदविधिः।** (109), so that only such padas as are syntactically

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and semantically connected (*samartha*) are subject to composition. Compounds are derived nominal bases (*prātipadika*: A 1.2.46 [48]), so that endings of constituent padas are generally deleted (A 2.4.71 [278]).

Remarks.

302 1. In saying compounds are generally formed from padas, I have used the qualifier 'generally' because the view common to Pāṇinīyas, beginning with Kātyāyana (vt. 4 on A 4.1.48: **गतिकारकोपपदानां कृद्भिः सह समासवचनम्**), is that in the derivation of compounds whose prior members are a gati, a pada signifying a particular kāraka, or an upapada (A 2.2.18-19, 2.1.32 [308, 315]) and whose second member contains a kṛt affix, the term with this affix enters into composition before nominal endings are introduced after it. One example will show what is at issue. A 4.1.50: **क्रीतात्करणपूर्वात् (ङीष्)** (*krītāt karaṇapūrvāt* [*ṅīṣ* 25]) introduces the feminine affix *ṅīṣ* after *krīta* 'bought' if this is preceded by a term denoting an instrument (*karaṇapūrvāt*) of buying; e.g., *aśvakrītī* 'bought with a horse'. A 4.1.50 is an exception to A 4.1.4 (271). If, now, the compound *aśvakrīta* is formed, by A 2.1.32 (308), after all nominal endings have been introduced, the posited string from which the compound is derived will be *aśva-ā krītā-s*, the basis for the string *aśvena krītā*, equivalent to *aśvakrītī* (nom. sg.). Once the related padas are combined, the compound will have the shape *aśvakrītā*, a term in *-ā*, which does not qualify then for taking *ṅīṣ* by A 4.1.50. All is in order if *krīta*, the mere derived nominal base with the kṛt suffix *kta*, combines with *āśva-ā*. Other arguments given for this view (vtts. 5-8 on A 4.1.48) cannot be considered here. Nor can I take up other possible solutions to the problems at issue or whether this view of Pāṇinīyas --- canonized as paribhāṣā 75 of the Paribhāṣenduśekhara (**गतिकारकोपपदानां**

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कृद्भिः सह समासवचनं प्राक्सुबुत्पत्तेः।) is justifiably attributed to Pāṇini himself. I take up these issues in part IV.2 of my work.

303 2. Taking into consideration all treatises of Pāṇinīyas, six compound types are recognized, as follows: **1.** All constituent padas are nominal (the type *rāja-puruṣa*); **2.** All constituents are nominal, but one is a derivate with a kṛt suffix and does not contain any nominal ending (see 301); **3.** The first member is a nominal pada, the second a verbal pada that is either accented (e.g., *yat pari-yánti* 'when they go round') or preceded by a gati (A 1.4.60 [55], e.g.., *anu-prāviśat* 'entered'); **4.** The first component is a nominal pada, the second a verbal base (e.g., *āyata-stū* 'one who praises for an extended time'); **5.** Both members are verbal padas (e.g., *aśnīta-pibatā* [< *aśnīta pibata*] 'constant eating and drinking'); **6.** The first component is a verbal pada, the second a nominal one (e.g., *jahi-stamba* 'strike [*jahi*] the post'). Type **5** is provided for by a gaṇasūtra (Pathak-Chitrao 699, no. 178.60-61) which was known at least as early as Patañjali's time (Bh. I.235.14 [on A 1.2.64 vt. 8]). Type **6** is represented by members of the gaṇa beginning with *mayūravyaṁsaka* (Pathak-Chitrao 698, no. 178) and provided for by a gaṇasūtra (Pathak-Chitrao 698, no. 178.56). Second members in compounds of type **4** are treated by Kātyāyana as containing the agentive suffix ***kvip*** (vt. 2 on A 3.2.178). Other details on this classification (for which see, e.g., ŚK on A 2.1.4, VBhS kārikā 28) cannot be discussed here. Suffice it to say that the padapāṭha to the Ṛgveda already recognizes compounds of type **3** (e.g. ṚV 1.115.2: **विऽतन्वते** [*vi-tanvaté*] corresponding to **वि तन्वते** [*vi tanvaté*] of the saṁhitāpāṭha) and that, so far as rules of the Aṣṭādhyāyī are concerned, compounds are described essentially in the way summarized in 300. I also leave for a subsequent part of my work a discussion of semantic classifications of compounds mentioned in the commentatorial literature.

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2.4.2.3.1. Avyayībhāva compounds.

304 Avyayībhāva compounds are formed by rules under the heading of

A 2.1.5: अव्ययीभावः। (*avyayībhāvaḥ*)

which provides that compounds derived by subsequent sūtras have the class name *avyayībhāva*. Such compounds are both alternating and obligatory (see 301). Obligatory avyayībhāvas are derived by rules preceding A 2.1.11. According to

A 2.1.6: अव्ययं विभक्तिसमीपसमृद्धिव्यृद्ध्यर्थाभावात्यया-सम्प्रतिशब्दप्रादुर्भावपश्चाद्यथानुपूर्व्ययौगपद्य-सादृश्यसम्पत्तिसाकल्यान्तवचनेषु। (*avyayaṁ vibhaktisamīpasamṛddhivyṛddhyarthābhāvā-tyayāsampratiśabdaprādurbhāvapaścād-yathānupūrvyayaugapadyasādṛśyasampatti sākalyāntavacaneṣu*)

an avyaya (see 54) combines with a related pada to form an avyayībhāva compound if it is used to convey the following: **a.** what is signified by a nominal ending (*vibhakti*: A 1.4.104 [67]); for example, *adhi-strī* (> *adhi-stri*: A 1.2.47 [459]) 'with reference to women', where *adhi* is used to convey the meaning of a seventh-triplet ending, as in the paraphrase *striṣv adhikṛtya* 'with reference to women' (loc. pl. *strīṣu*). **b.** proximity (*samīpa*); e.g., *upakumbham* (< *upakumbha-am*: A 2.4.83 [307]) 'near the pot'. **c.** flourishing (*samṛddhi*); e.g., *sumadram* in सुमद्रं वर्तते। (*sumadraṁ vartate*) 'Things are going well for the Madras.' **d.** lack of prosperity (*vyṛddhi*); e.g., *duryavanam* in दुर्यवनं वर्तते। (*duryavanaṁ vartate*) 'Things are going badly for the Yavanas.' **e.** absence of an object (*arthābhāva*); e.g., *nirmakṣikam* 'lack of flies'. **f.** a passing, elapsing (*atyaya*); e.g., *atihimam* in अतिहिमं वर्तते। (*atihimaṁ vartate*) 'The time is here when snow is past.' **g.**

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that a moment is not proper for something (*asamprati*); e.g., अतिनिद्रं वर्तते। (*atinidraṁ vartate*) 'The moment is not proper for sleeping.' **h.** the appearance of a sound or word (*śabdaprādurbhāva*); e.g., *itihari* '(The name) "Hari" (is wide spread).' **i.** posteriority (the meaning of *paścāt*); e.g., *anuratham* 'after the chariot(s)' **j.** a meaning of *yathā*; e.g., *anurūpam* 'fitting(ly)' **k.** sequence, order (*ānupūrvya*); e.g., *anujyeṣṭham* 'eldest first', as in अनुज्येष्ठं प्रविशन्तु भवन्तः। (*anujyeṣṭhaṁ praviśantu bhavantaḥ*) 'Please enter, oldest ones first.' **l.** simultaneity (*yaugapadya*); e.g., *sacakram* 'along with the wheel' in सचक्रं निधेहि। (*sacakraṁ nidhehi*) 'Set it down along with the wheel.' **m.** similarity (*sādṛśya*); e.g., *sakikhi* 'like a monkey' **n.** fulfillment, success (*sampatti*); e.g., *sakṣatram* 'as it should be with a Kṣatriya' **o.** completeness (*sākalya*); e.g., *satṛṇam* 'down to a blade of grass', as in सतृणमभिन्यवहरति। (*satṛṇam abhivyavaharati*) '... eats everything, right down to a blade of grass.' **p.** end, terminal point (*anta*); e.g., *sāgni* in साग्न्यधीते। (*sāgny adhīte*) '... studies through the section dealing with the fire.'

The avyaya *yathā* is connected with several meanings, which the Kāsikā on A 2.1.6 gives as follows: fitness, aptness, compatability (*yogyatā*), repetition (*vīpsā*), similarity (*sādṛśya*), not transgressing (*padārthānativṛtti*). Although A 2.1.6 alone would allow a compound to be formed containing *yathā* associated with any of these meanings, this cannot be allowed. One can indeed correctly use an avyayībhāva *yathāśakti* 'within one's power, as well as one can', but there is no such compound for *yathā* used as in

(96) यथा देवदत्तस्तथा यज्ञदत्तः। (*yathā devadattas tathā yajñadattaḥ*) 'Yajñadatta is just like Devadatta.'

Hence, Pāṇini specifies that *yathā* enters into an avyayībhāva compound only if it is used in a meaning other than similarity (*asādṛśye*):

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A 2.1.7: **यथासादृश्ये।** (*yathāsāsdṛśye*)

These avyayībhāva compounds do not alternate with sequences of padas derived from strings posited to account for the compounds. For example, *upakumbha* is derived from *upa-s kumbha-as,* but *upakumbham* does not alternate with **upa kumbhasya;* it is equivalent to *kumbhasya samīpe.* Similarly, *sūpaprati* 'a bit of broth' and *śākaprati* 'a bit of vegetables' are non-alternating avyayībhāva compounds. By

A 2.1.9: **सुप्प्रतिना मात्रार्थे।** (*sup pratinā mātrārthe*)

a nominal pada (*sup*) combines with a form of *prati* used in the meaning 'a bit' (*mātrārthe*) to form an avyayībhāva compound.

305 Alternating avyayībhāva compounds are formed by sūtras under the heading of A 2.1.11 (301). The following are examples of such rules:

A 2.1.12: **अपपरिबहिरञ्चवःपञ्चम्या।**

(*apaparibahirañcavaḥ pañcamyā*)

A 2.1.13: **आङ् मर्यादाभिविध्योः।** (*āṅ maryādābhividhyoḥ*)

A 2.1.19: **सङ्ख्या वंश्येन।** (*saṅkhyā vaṁśyena*)

A 2.1.20: **नदीभिश्च।** (*nadībhiś ca*)

The first two sūtras concern items that are construed with nominals in fifth-triplet endings (A 2.3.10, 29 [250]). *apa* 'away from', *pari* 'round', *bahis* 'outside', and derivates with *-ancu* (*apaparibahirañcavaḥ*) combine with related padas, as does *āṅ* used in the sense of 'boundary, included limit' (*maryādābhividhyoḥ*). For example, *apatrigartam* 'away from the Trigarta country', *paritrigartam* 'round the Trigarta country', *bahirgrāmam* 'outside the village', *prāggrāmam* 'east of the village', *āpāṭaliputram* 'up to (and including) Pāṭaliputra' alternate with *apa trigartebhyaḥ, pari trigartebhyaḥ, bahir grāmāt, prāg grāmāt, ā pāṭaliputrāt.* Similarly, *ākumāram,* as in

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(97) **आकुमारं पाणिनेर्यशः।** (*ākumāraṁ pāṇiner yaśaḥ*)

'Pāṇini's fame extends to youths.'

alternates with *ā kumārebhyaḥ*. According to A 2.1.19, a number word (*saṅkhyā*) forms a compound with a related pada denoting a descendant of a lineage (*vaṁśyena*), which can be physical or spiritual. For example, *trimuni vyākaraṇasya* 'the three sages of grammar' alternates with *trayo munayo vyākaraṇasya*, both used with reference to Pāṇini, Kātyāyana, and Patañjali. By A 2.1.20, number words also (*ca*) form avyayībhāva compounds with names of rivers (*nadībhiḥ*); e.g., *saptagaṅgam* 'the seven (rivers that make up the) Gangā', which alternates with *sapta gaṅgāḥ*.

306 The compound *unmattagaṅgam*, which refers to a place where the Gangā rages, also contains a river name, so that the rule which serves to form this,

A 2.1.21: **अन्यपदार्थे च संज्ञायाम्।** (*anyapadārthe ca saṁjñāyām*)

is placed after A 2.1.20. According to A 2.1.21, a nominal pada combines with a river name also to form a compound that refers to something other than its constituents' meanings (*anyapadārthe*) and is a name (*saṁjñāyām*). Since the compound thus formed is specifically a place name, it does not alternate with a corresponding string such as *unmattā gaṅgā* 'the raging Gangā', which is semantically different. Although the sūtra providing for the compound is stated in the section headed by A 2.1.11, then, the avyayībhāva it serves to derive is nevertheless obligatory.

307 Avyayībhāva compounds are assigned to the avyaya class (A 1.1.41 [54]). In general, nominal endings are deleted after an avyaya:

A 2.4.82: **अव्ययादाप्सुपः (लुक्)** (*avyayād āpsupaḥ* [*luk* 58])

provides for zero (*luk*) to replace a feminine affix *āp* or a nominal ending (*āpsupaḥ*) after an avyaya. For example, *śāka-*

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prati in शाकप्रति भुङ्क्ते। (*śākaprati bhuṅkte*) '... is eating a bit of vegetables' contrasts with *śākam* 'vegetable' in शाकम् भुङ्क्ते।(*śākam bhuṅkte*). There are, in addition, special rules concerning avyayībhāva compounds in particular. After an avyayībhāva in *-a* (*avyayībhāvād ataḥ*: A 1.1.67, 70, 72 [90, 85, 30]), all nominal endings are not (*na*) dropped; instead, they are replaced by *am*, except for endings of the fifth-triplet (*apañcamyāḥ*), which remain:

A 2.4.83: नाव्ययीभावादतोऽम् त्वपञ्चम्याः।

(*nāvyayībhāvād ato' m tv apañcamyāḥ*)

E.g., *upakumbham*; similarly, corresponding to *ā pāṭaliputrāt*, one has an avyayībhāva *āpāṭaliputram*, but if such a compound is followed by a fifth-triplet ending, replacement by *am* does not apply: *ā upakumbhāt* 'up to near the pot'. In addition, substitution by *am* applies only variously (*bahulam*), not obligatorily, to endings of the third and seventh triplets (*tṛtīyāsaptamyoḥ*):

A 2.4.84: तृतीयासप्तम्योर्बहुलम्। (*tṛtīyāsaptamyor bahulam*)

For example, a locative singular *upakumbhe* (< *upakumbha-i*) alternates with *upakumbham*.

2.4.2.3.2. Tatpuruṣa compounds.

308 Tatpuruṣa compounds are formed by rules under the heading of

A 2.1.22: तत्पुरुषः। (*tatpuruṣaḥ*)

Composition rules of this section provide that padas terminating in (A 1.1.72 [30]) nominal endings of given triplets combine with related padas to form compounds called *tatpuruṣa*. Thus, according to A 2.2.8 (301) a pada with an ending of the sixth triplet combines with a related pada. By

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A 2.1.24: द्वितीया श्रितातीतपतितगतात्यस्तप्राप्तापन्नैः। (*dvitīyā śritātītapatitagatātyastaprāptāpannaiḥ*)

a pada with a second-triplet ending (*dvitīyā*) combines with a related form of *śrita* 'resorted to, reached', *atīta* 'gone beyond', *patita* 'fallen', *gata* 'gone', *atyasta* 'thrown beyond', *prāpta* 'reached, attained', *āpanna* 'gotten to'; e.g., *kaṣṭaśritaḥ* (= *kaṣṭaṁ śritaḥ*) 'one who has gone through difficulty', *kāntārātītaḥ* (= *kāntāram atītaḥ*) 'one who has gone beyond the forest', *narakapatitaḥ* (= *narakaṁ patitaḥ*) 'fallen into hell', *grāmagataḥ* (= *grāmaṁ gataḥ*) 'gone to the village', *taraṅgātyastaḥ* (= *taraṅgān atyastaḥ*) 'thrown beyond the waves', *sukhaprāptaḥ* (= *sukhaṁ prāptaḥ*) 'one who has attained happiness', *duḥkhaprāptaḥ* (= *duḥkhaṁ prāptaḥ*), *duḥkhāpannaḥ* (= *duḥkham āpannaḥ*) 'one who has come upon unhappiness'.

A 2.1.30: तृतीया तत्कृतार्थेन गुणवचनेन। (*tṛtīyā tatkṛtārthena guṇavacanena*)

provides that a pada with a third-triplet ending (*tṛtīyā*) forms a compound with a related pada that is a guṇavacana element (*guṇavacanena*: see 273-275) on condition that the property in question is produced by what the first pada denotes (*tatkṛtārthena*); e.g., *kirikāṇaḥ* (= *kiriṇā kāṇaḥ*) 'one who has been blinded in one eye by a boar'. Padas with third-triplet endings also form tatpuruṣa compounds with related forms of *pūrva* 'previous', *sadṛśa* 'similar', *sama* 'same', items meaning 'lacking ...' (*ūnārtha*), *kalaha* 'quarrel', *nipuṇa* 'adept', *miśra* 'mixed', *ślakṣṇa* 'gentle':

A 2.1.31: पूर्वसदृशसमोनार्थकलहनिपुणमिश्रश्लक्ष्णैः। (*pūrvasadṛśasamonārthakalahanipuṇa-miśraślakṣṇaiḥ*)

E.g., *māsapūrvaḥ* (= *māsena pūrvaḥ*) 'earlier by a month', *mātṛsadṛśaḥ* (= *mātrā sadṛśaḥ*) 'resembling his mother', *pitṛsamaḥ* (= *pitrā samaḥ*) 'just like his father', *kārṣāpa-ṇonaḥ* (= *kārṣāpaṇonaḥ*) 'lacking one kārṣāpaṇa', *vāk-kalahaḥ* (= *vāgbiḥ kalahaḥ*) 'quarrel with words', *vāgnipuṇaḥ* (= *vācā*

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nipuṇaḥ) 'adept at speech', *guḍamiśraḥ* (= *guḍena miśraḥ*) 'blended with raw sugar', *ācāraślakṣṇaḥ* (= *ācāreṇa ślakṣṇaḥ*) 'gentle in conduct'. And by

A 2.1.32: **कर्तृकरणे कृता बहुलम्।** (*kartṛkaraṇe kṛtā bahulam*)

a pada with a third-triplet ending signifying an agent or an instrument (*kartṛkaraṇe*) variously (*bahulam*) forms a compound with a related pada from a base that ends in a kṛt affix, as in *ahihataḥ* (= *ahinā hataḥ*) 'killed by a snake', *paraśucchinnaḥ* (= *paraśunā chinnaḥ*) 'cut with an axe'.

According to

A 2.1.36: **चतुर्थी तदर्थार्थबलिहितसुखरक्षितैः।** (*caturthī tadarthārthabalihitasukharakṣitaiḥ*)

a pada with a fourth-triplet ending (*caturthī*) is combined with one that refers to something intended for what the first pada denotes (*tadartha*) as well as with forms of *artha* 'purpose', *bali* 'offering', *hita* 'beneficial', *sukha* 'comfortable, beneficial', *rakṣita* 'protected, kept'; e.g., *yūpadāru* (= *yūpāya dāru*) 'wood for a sacrificial pole', *kuberabaliḥ* (= *kuberāya baliḥ*) 'offering to Kubera', *gohitam* (= *gobhyo hitam*) 'beneficial to cattle', *gorakṣitam* (= *gobhyo rakṣitam*) 'saved for the cattle'.

A pada with an ending of the fifth triplet (*pañcamī*) forms a tatpuruṣa compound with a form of *bhaya* (*bhayena*):

A 2.1.37: **पञ्चमी भयेन।** (*pañcamī bhayena*)

For example: *caurabhayam* (= *caurebhyo bhayam*) 'fear of thieves'.

According to

A 2.1.40: **सप्तमी शौण्डैः।** (*saptamī śauṇḍaiḥ*)

a pada with a seventh-triplet ending (*saptamī*) enters into a compound with a pada formed from a word in the group beginning with *śauṇḍa* 'addicted to, fond of, adept at' (*śauṇḍaiḥ* [instr. pl., see 209]), as in *akṣaśauṇḍaḥ* (= *akṣeṣu śauṇḍaḥ*) 'fond of, skilled at dice'.

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309 In addition to compounds of the type *rājapuruṣa,* formed by A 2.2.8 (301), there are tatpuruṣas in which a component derived from a pada with a sixth-triplet ending is the second member of the compound. Two rules will illustrate this:

A 2.2.1: **पूर्वापराधरोत्तरमेकदेशिनैकाधिकरणे।**
(*pūrvāparādharottaram ekadeśinaikādhikaraṇe*)

A 2.2.2: **अर्धं नपुंसकम्।** (*ardhaṁ napuṁsakam*)

The first sūtra provides that a pada formed with *pūrva* 'front, fore', *apara* 'back', *adhara* 'lower', *uttara* 'upper' combines with a related pada that denotes a whole entity (*ekadeśinā* [inst. sg.] 'which has parts'), provided the latter refers to a single thing (*ekādhikaraṇe*). For example, *kāya* in *pūrvakāyaḥ* (= *kāyasya pūrvam*) 'the front of the body' refers to a single thing, a body, part of which is referred to by *pūrva.* As is clear from *ekadeśinā* of A 2.2.1, the relation between the meanings of constituent padas is that of part and whole (*avayavāvayavibhāvasambandha*), to express which a sixth-triplet ending is introduced (A 2.3.50 [251]), so that Pāṇini need not specify in A 2.2.1 that a pada with an ending of the sixth-triplet is a constituent. By A 2.2.2, a pada containing *ardha* used as a neuter (*napuṁsakam*) --- that is, used as a noun meaning 'half' and not as a qualifier --- combines with a pada referring to a single whole thing; e.g., *ardhapippalī* (= *ardhaṁ pippalyāḥ*) 'half of a pepper'.

310 A 2.1.26: **खट्वा क्षेपे।** (*khaṭvā kṣepe* [*dvitīyā* 24, *ktena* 25])

provides that a pada consisting of *khaṭvā* 'bed' and a second-triplet ending combines with a related pada from a derivate in *-kta* (*ktena*), on condition that censure is to be conveyed (*kṣepe*). This rule provides for an obligatory compound, as shown in 301.

311 The rules for deriving tatpuruṣa compounds considered up to now concern padas from nominal bases that can be followed by different endings. An avyaya such as the negative particle

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naÑ, included in the group which begins with *svar* (A 1.1.37 [54]), is not eligible to take various nominal endings; it is followed only by a first-triplet ending (A 2.3.46 [240]). However, this too forms tatpuruṣa compounds. By

A 2.2.6: **नञ्** (*naÑ*)

a pada containing *naÑ* combines with a related pada; e.g., *abrāhmaṇa* (< *nabrāhmaṇa*: A 6.3.73 [461]) 'non-Brāhmaṇa'.

312 The pada *dātra-ā* (> *dātreṇa*) 'with a sickle' contains a third-triplet ending introduced to signify an instrument, and *lūnavat-s* (nom. sg. masc. *lūnavān*) 'one who has cut something' contains a derivate *lūnavat* (< *lū-tavat*: A 8.2.44 [549]) formed with the kṛt suffix *ktavatu*. The conditions are thus met for *dātra-ā* and *lūnavat-s* possibly to form a compound as provided for by *kartṛkaraṇe kṛtā* of A 2.1.32 (308). Although it is proper to say *dātreṇa lūnavān*, however, such an expression does not alternate with a compound **dātralūnavān*. Therefore, A 2.1.32 also states that, under the conditions stipulated, padas form compounds only variously (*bahulam*).

Now, consider again A 2.2.8 (301). This is a completely general rule, which allows any pada with a sixth-triplet ending to form a compound with any related nominal pada. For example, one could thereby derive a compound consisting of *manuṣya-ām* (> *manuṣyāṇām*) 'of men' and *śūratama-s* 'most heroic'. But a string *manuṣyāṇāṁ śūratamaḥ* does not alternate with a compound. Pāṇini therefore provides that a pada with a sixth-triplet ending does not (*na*) form a compound with a related pada if its ending is introduced on condition that a setting apart is to be denoted (*nirdhāraṇe*), that is, if it is gotten by A 2.3.41 (250):

A 2.2.10: **न निर्धारणे (षष्ठी)** (*na nirdhāraṇe* [*ṣaṣṭhī* 8])

Similarly, according to

A 2.2.12: **क्तेन च पूजायाम्** (*ktena ca pūjāyām*)

A 2.2.13: **अधिकरणवाचिना च** (*adhikaraṇavācinā ca*)

a pada with a sixth-triplet ending does not form a compound

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with a related pada that contains a derivate in *-kta* (*ktena*) introduced on condition that honoring is conveyed (*pūjāyām*: A 3.2.188, 2.3.67 [294, 249]) or which signifies a locus (*adhikaraṇavācinā* : A 3.4.76, 2.3.68 [293, 249]). For the genitive forms of complexes like *rājñaḥ saṁmataḥ* 'honored by the king', *eṣāṁ bhuktam* 'the place where they eat' do not form compounds with the other nominal forms. Nor do the genitives of the following sequences enter into composition with the other padas: *gavāṁ dohaḥ* 'milking of the cows' *apāṁ sraṣṭā* 'creator of the waters', *vajrasya bhartā* 'bearer of the vajra' (A 2.3.65 [240])). Accordingly,

A 2.2.14: **कर्मणि च।** (*karmaṇi ca*)

A 2.2.16: **कर्तरि च (तृजकाभ्याम्)** (*kartari ca* [*tṛjakābhyām* 15])

provide that a pada with a sixth-triplet ending signifying an object (*karmaṇi* : A 2.3.65) does not form a compound with a related pada and that this negation applies for genitives construed with padas that contain bases ending in *tṛc* and *aka* (*tṛjakābhyām*) introduced to signify an agent (*kartari*).

313 There is a series of tatpuruṣa compounds formed from coreferential (*samanādhikaraṇa*) padas. For example, in the string *nīla-s utpala-s,* from which *nīlam utpalam* 'blue lotus' is derived, the qualifier *nīla-s* 'blue' and the nominal *utpala-s* 'lotus' refer to the same thing, a lotus qualified as being blue. The padas *nīla-s utpala-s* form an alternating compound *nīlotpala*. Such a compound is provided for by a general rule,

A 2.1.57: **विशेषणं विशेष्येण बहुलम् (समानाधिकरणेन)** (*viśeṣaṇaṁ viśeṣyeṇa bahulam* [*samānādhikaraṇena* 49])

according to which a pada denoting a qualifier (*viśeṣaṇam*) combines variously (*bahulam*) with a coreferential pada (*samānādhikaraṇena*) denoting a qualificand (*viśeṣyeṇa*). For the present discussion, it will suffice to consider four additional rules of this kind:

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A 2.1.49: **पूर्वकालैकसर्वजरत्पुराणनवकेवलाः समानाधिकरणेन।** (*pūrvakālaikasarva-jaratpurāṇanavakevalāḥ samānādhikaraṇena*)

A 2.1.50: **दिक्सङ्ख्ये संज्ञायाम्।** (*diksaṅkhye saṁjñāyām*)

A 2.1.51: **तद्धितार्थोत्तरपदसमाहारे च।** (*taddhitārthottarapadasamāhāre ca*)

A 2.1.59: **श्रेण्यादयः कृतादिभिः।** (*śreṇyādayaḥ kṛtādibhiḥ*)

The first of these sūtras provides that padas with the following items combine with a coreferential pada: a term that refers to an earlier time (*pūrvakāla*), *eka* 'one', *sarva* 'whole, all', *jarat* 'aged', *purāṇa* 'old, ancient', *nava* 'new', *kevala* 'only'; e.g., *snātānulipta* 'bathed and then anointed with oil', *ekanātha* 'one and only lord', *sarvadevāḥ* (nom. pl.) 'all the gods', *jaradhastin* 'aging elephant', *purāṇamīmāṁsakāḥ* 'the ritual exegetes of old', *navapāṭhaka* 'new recitor', *kevalavaiyākaraṇa* 'only (a) grammarian'. By A 2.1.50, padas from terms that denote directions and from number words (*diksaṅkhye*) combine with coreferential padas, provided the compound to be formed is a name (*saṁjñāyām*), as in *pūrveṣukāmaśamī* 'East Iṣukāmaśamī', the name of a village, and *saptarṣayaḥ* (nom. pl., lit. 'the seven ṛṣis'), the name of Ursa major. According to A 2.1.51, direction and number words also combine with coreferential padas under the following conditions: **a.** A meaning is to be expressed that conditions the introduction of a taddhita affix (*taddhitārtha*), which then occurs with the compound; e.g., the padas *pūrvā-i śālā-i*, from which the string *purvasyāṁ śālāyām* 'in the eastern house' is derived, are combined to form the tatpuruṣa compound *pūrvaśālā* (< *pūrvāśālā*: A 6.3.34 [327]), which is the base of the derivate *pūrvaśālā-a* (> *paurvaśāla* 'located in the eastern house'), with the taddhita suffix *ña* (A 4.2.107 [344]). **b.** The two padas from which will be formed the tatpuruṣa compound occur before a subsequent component pada (*uttarapada*) of a

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compound, that is, before the third member of a three-part bahuvrīhi (A 2.2.24 [317]); e.g., given *pūrvā-s śālā-s priyā-s*, the first two padas form a tatpuruṣa compound *pūrva-śālā-* in *pūrvaśālāpriyā*, whence *pūrvaśālāpriya* (A 1.2.48 [322]) 'one to whom the eastern house is dear'. c. A conglomerate, group (*samāhāra*) is to be signified; e.g., *aṣṭādhyāyī* (< *aṣṭādhyāya-ī*: A 4.1.21 [271]) 'collection of eight chapters'. A 2.1.59 lets padas from bases of the set that begins with *śreṇi* 'row' combine with coreferential padas formed from terms of the type *kṛta* 'made' (see 204, 210).

314 A tatpuruṣa compound that is formed by A 2.1.51 (313) and has a number word as its first constituent (*saṅkhyāpūrvaḥ*) is called *dvigu*:

A 2.1.52: **सङ्ख्यापूर्वो द्विगुः।** (*saṅkhyapūrvo dviguḥ*)

As provided by

A 2.1.23: **द्विगुश्च(तत्पुरुषः)** (*dviguś ca* [*tatpuruṣaḥ* 22])

a dvigu compound also has the class name *tatpuruṣa*. Another subgroup of tatpuruṣa compounds is called *karmadhāraya*. By

A 1.2.42: **तत्पुरुषःसमानाधिकरणःकर्मधारयः।**

(*tatpuruṣaḥ samānādhikaraṇaḥ karmadhārayaḥ*)

a tatpuruṣa whose constituents are coreferential (*samānādhikaraṇaḥ*) has this class name.

315 Certain obligatory tatpuruṣa compounds are provided for by sūtras in which *nityam* 'necessarily' is either directly stated or understood to recur. A 2.2.16 (312) disallows a compound consisting of a genitive referring to an object and agent nouns with *tṛc* and *aka*, but by

A 2.2.17: **नित्यं क्रीडाजीविकयोः।** (*nityaṁ krīḍājīvikayoḥ*)

a genitive referring to an object obligatorily forms a compound with a pada containing an agentive derivate in *-aka*, if the derivate denotes a game or a means of living (*krīḍājīvikayoḥ*); e.g., *uddālakapuṣpabhañjikā* 'a game in which flowers of the Uddālaka plant are torn off', *dantalekhaka* 'one who makes his living scraping teeth'. *nityam* is understood to

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recur in

A 2.2.18: **कुगतिप्रादयः।** (*kugatiprādayaḥ*)

A 2.2.19: **उपपदमतिङ्।** (*upapadam atiṅ*)

These sūtras provide that padas containing *ku*, members of the gati class (A 1.4.60-61 [55]) and the group beginning with *pra* (A 1.4.58) obligatorily combine with related padas, as does an upapada (A 3.1.92 [295]), provided it is not a pada with a verb ending (*atiṅ*); e.g., *kupuruṣa* 'worthless man', *ūrīkṛtya* 'having accepted', *atilakṣmī* 'one who has surpassed in wealth Lakṣmī, the goddess of wealth', *kumbhakāra* 'pot maker' (A 3.2.1).

Remark.

316 I have cited A 2.1.11, 12 (301, 305) as separate sūtras, in accordance with the usual Pāṇinīya practice, although Patañjali's short discussion of these begins (Bh. I.380.7) with the statement that a rule split (*yogavibhāgaḥ*) has to be made (*kartavyaḥ*), in order that *vibhāṣā* might be a heading. Obviously, Patañjali knew of a tradition in which there was a single rule **विभाषापपरिबहिरञ्चवः पञ्चम्या।** Even if one adopts this, however, *vibhāṣa* could remain a heading to be understood in subsequent sūtras, just as *ātmanepadam* of A 1.3.12 (138) is understood to recur in a long series of sūtras that follow. Addition details will be considered in part V.2.2 of my work.

2.4.2.3.3. Bahuvrīhi compounds.

317 A compound that is part of a remainder (*śeṣaḥ*) with respect to the compounds provided for by A 2.1.6-2.2.22 is called *bahuvrīhi* according to

A 2.2.23: **शेषो बहुव्रीहिः।** (*śeṣo bahuvrīhiḥ*)

In preceding rules of composition, Pāṇini states, wherever appropriate, that padas with endings of particular triplets

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combine with related padas. In effect, then, A 2.2.23 provides that the class name *bahuvrīhi* applies to a compound from padas with endings which have not been specified in preceding rules. The one triplet of nominal endings which does not come into play in such rules is the first: The constituents of bahuvrīhi compounds are regularly padas with first-triplet endings. Another difference between compounds considered earlier and bahuvrīhis has to do with the number of constituents. In

A 2.2.24: **अनेकमन्यपदार्थे।** (*anekam anyapadārthe*)

Pāṇini provides that any number of padas (*anekam*) can combine with related padas to form a bahuvrīhi. It follows that compounds derived by preceding rules do not have this liberty; they are formed from two padas each. A 2.2.24 also states a condition for forming a bahuvrīhi compound: that it denote something distinct from what the constituent padas signify (*anyapadārthe*). Given that the constitutent padas generally have first-triplet endings, if we let the relative pronoun *yad* serve as a variable whose values will be what is denoted by a bahuvrīhi compound, then *yad* can be followed by an ending of a triplet other than the first. For example, from *prāpta-s udaka-s* (> *prāptam udakam*) is derived the bahuvrīhi *prāptodaka*. This is used with reference to something that water (*udaka*, nom. sg. *udakam*) has reached (*prāpta*, nom. sg. nt. *prāptam*), as in *prāptodako grāmaḥ* 'a village that the water has gotten to'. The compound thus used is paraphrased as follows: **यं ग्राममुदकं प्राप्तं स प्राप्तोदक इत्युच्यते।** (*yaṁ grāmam udakaṁ prāptaṁ sa prāptodaka ity ucyate*) 'A village which water has reached is referred to as *praptodakaḥ*.' The pronoun *yad* here is followed by the second-triplet ending *am* (acc. sg. masc. *yam* < ... *yad-am*). Other examples, according to the triplet of endings that occurs with *yad*, are: *ūḍharatha* 'one by which a chariot has been drawn' (*ūḍha-s ratha-s yad-ā* [> *ūḍho ratho yena* (*yayā*)]), *upahṛtapaśu* 'one to whom an animal has been offered' (*upahṛta-s paśu-s yad-e* [> *upahṛtaḥ*

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paśur yasmai (*yasyai*)]), *uddhṛtaudana* 'something from which rice has been lifted' (*uddhṛta-s odana-s yad-as* [> *uddhṛta odano yasmāt* (*yasyāḥ*)]), *bahuvrīhi* 'one who has much rice' (*bahu-s vrīhi-s yad-as* [> *bahur vrīhir yasya* (*yasyāḥ*)]), *vīrapuruṣa* 'a place where there are heroic men' (*vīra-as puruṣa-as yad-i* [> *vīrāṇ puruṣā yasmin* (*yasyām*)]), with endings of the third through seventh triplets, respectively.

Other sūtras provide for deriving bahuvrīhi compounds under more particular conditions. The following will suffice to illustrate:

A 2.2.26: **दिङ्नामान्यन्तराले।** (*diṅnāmāny antarāle*)

A 2.2.28: **तेन सहेति तुल्ययोगे।** (*tena saheti tulyayoge*)

According to the first rule, names of directions (*diṅnāmāni*) combine to form a compound that refers to the intermediate direction (*antarāle*); e.g., *dakṣiṇapūrvā* (*dik*) 'south east' refers to the direction that is intermediate between the south (*dakṣināyā diśaḥ*) and the east (*pūrvasyāś ca diśaḥ*). A 2.2.28 provides that a form of *saha* 'with' combines with a pada that contains a third-triplet ending (*tena*), if a like relation (*tulyayoge*) is involved between two participants and an act; e.g., *saha-s* and *putra-ā* (> *saha putreṇa* 'with his son': A 2.3.19 [250]) combine to form *sahaputra*, as in *sahaputra āgataḥ* '... came with his son': The father and his son have the same relation to the act of coming to a place, although only the father is spoken of as the principal participant in this act.

2.4.2.3.4. Dvandva compounds.

318 An unrestricted number of padas may combine to form a compound called *dvandva* under the condition that part of the derivate's signification is a meaning of *ca* 'and' (*cārthe*):

A 2.2.29: **चार्थे द्वन्द्वः (अनेकम्)** (*cārthe dvandvaḥ* [*anekam* 24])

For example: *śītoṣṇa* 'hot and cold', *vāktvaca* 'voice and skin',

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plakṣanyagrodha 'Plakṣa and Nyagrodha trees'.

2.4.2.3.5. Upasarjanas and the order of constituents.

319 Certain terms in rules of composition appear in the nominative, that is, in first-triplet forms. According to

A 1.2.43: **प्रथमानिर्दिष्टं समास उपसर्जनम्।** (*prathamā-nirdiṣṭaṁ samāsa upasarjanam*)

whatever is referred to by such a nominative (*prathamā-nirdiṣṭam*) in a composition rule (*samāse*) is called *upa-sarjana.* Classification of elements as upasarjanas is meant in the first instance for establishing an order among constituents of compounds. By

A 2.2.30: **उपसर्जनम्पूर्वम्।** (*upsarjanam pūrvam*)

an upasarjana is the prior (*pūrvam*) constituent in a compound. For example, A 2.2.8 (301) contains the nominative singular form *ṣaṣṭhī.* According to A 1.2.43, a pada with a sixth-triplet ending, then, is classed as upasarjana, so that it is the first constituent of a compound such as *rājapuruṣa,* derived by A 2.2.8. Similarly, *dvitīyā, tṛtīyā, caturthī, pañcamī, saptamī* in A 2.1.24, 30-32, 36, 37, 40 (308) refer to padas that are classed as upasarjanas and occur as first constituents of compounds.

On the other hand, certain padas which belong to the upasarjana class by A 1.2.43 are second constituents in particular compounds. For example, the tatpuruṣa *rājadantaḥ* 'front tooth' is derived, by A 2.2.8, from a string *danta-ām rājan-s* (> *dantānāṁ rājā,* lit. 'king of the teeth'). According to A 2.2.30, one would derive **dantarāja* instead of *rājadanta.* To account for compounds of this sort, Pāṇini lists them in a gaṇa, beginning with *rājadanta,* and provides that in these derivates (*rājadantādiṣu*) an upasarjana occurs as a sub-sequent constituent (*param*):

A 2.2.31: **राजदन्तादिषु परम्।** (*rājadantādiṣu param*)

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320 Special provision has to be made for the order of constitutents in bahuvrīhi and dvandva compounds (317-318), since any constituent pada referred to by the nominative *anekam* is an upasarjana, hence eligible for being a prior constituent by A 2.2.30. According to

A 2.2.32: **द्वन्द्वे घि (पूर्वम्)** (*dvandve ghi* [*pūrvam* 30])

A 2.2.33: **अजाद्यदन्तम्।** (*ajādyadantam*)

A 2.2.34: **अल्पाच्तरम्।** (*alpāctaram*)

padas of the following kinds are prior constituents in a dvandva compound: one formed from a base of the ghi class (A 1.4.7 [57]), from a base that begins with a vowel and ends in short *a* (*ajādyadantam*), and one with less syllables (*alpāctaram*) than another constituent; e.g., *paṭugupta* 'clever (*paṭu*) and secret', *uṣṭrakhara* 'camel (*uṣṭra*) and ass', *plakṣanyagrodha* 'plakṣa and nyagrodha trees'. By

A 2.2.35: **सप्तमीविशेषणे बहुव्रीहौ।** (*saptamīviśeṣaṇe bahuvrīhau*)

A 2.2.36: **निष्ठा।** (*niṣṭhā*)

a pada with a seventh-triplet ending and one that signifies a qualifier (*saptamīviśeṣaṇe*), as well as one formed from a base with a niṣṭhā suffix (A 1.1.26 [66]) are prior constitutents in bahuvrīhi compounds; e.g., *kaṇṭhekāla* '(Śiva,) on whose throat there is black' (= *kaṇṭhe* [*sthitaḥ*] *kālo yasya*), *citragu* 'one who has spotted cows' (*citraguḥ* = *citrā gāvo yasya*), *kṛtakaṭa* 'someone by whom a mat has been made' (*kṛtakaṭaḥ* = *kṛtaḥ kaṭo yena*). There are also certain bahuvrīhis with constituents such as *āhita* 'set up', *hata* 'killed' that have varying orders of elements. For example, one can have *āhitāgni* 'one who has set up a sacrificial fire' or *agnyāhita*, *hataputra* 'one whose son has been killed' or *putrahata*. Such compounds are illustrated in a gaṇa beginning with *āhitāgni*, traditionally considered a type listing (*ākṛtigaṇa*: 204).

A 2.2.37: **वाहिताग्न्यादिषु।** (*vāhitāgnyādiṣu*)

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provides that a pada formed from a base with a niṣṭhā suffix optionally (*vā*) is a prior constituent in such compounds (*āhitāgnyādiṣu*).

321 *viśeṣaṇam* of A 2.1.57 (313) refers to padas classed as upasarjana by A 1.2.43 (319), hence eligible for being the first constituents of karmadhāraya compounds (A 1.2.42 [314]), as in *nīlotpala*. There are, however, some compounds of this type with variable order; for example, one can have both *kaḍārapuruṣa* and *puruṣakaḍāra* 'tawny man'. Qualifiers that are constituents in such compounds are given in a gaṇa whose first member is *kaḍāra* 'tawny'. According to

A 2.2.38: **कडाराः कर्मधारये।** (*kaḍārāḥ karmadhāraye*)

members of this group optionally occur as first constituents in a karmadhāraya compound.

322 A 1.2.44: **एकविभक्ति चापूर्वनिपाते (समास उपसर्जनम्)** (*ekavibhakti cāpūrvanipāte* [*samāsa upasarjanam* 43])

provides that a pada which is eligible to take only one triplet of endings (*ekavibhakti*) for purposes of deriving a compound also (*ca*) is assigned the class name *upasarjana*, except with respect to its being placed in prior position (*apūrvanipāte*). Classification as an upasarjana thus has a purpose other than accounting for the proper arrangement of constituents in compounds. For example, according to

A 1.2.48: **गोस्त्रियोरुपसर्जस्य (ह्रस्वः)** (*gostriyor upasarjanasya* [*hrasvaḥ* 47])

the vowel of *go* 'cow, bull' occurring as an upasarjana and the final vowel of an upasarjana that ends in feminine affix (*strī*) are replaced by a short vowel (*hrasvaḥ*). Thereby, the *-o* in *citrago* is replaced by the short vowel *-u*, and the *-ī* of *niṣkauśāmbī*, formed by A 2.2.18 (315), is replaced by *-i*: *citragu* 'one who has spotted cows', *niṣkauśāmbi* 'one who has departed from Kāuśāmbī'. The latter is an obligatory compound derived from a string in which *kauśāmbī* can have only an

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ending of the fifth triplet (*nis-s kauśāmbī-as*), so that the pada *kauśāmbī-as* is classed as upasarjana according to A 1.2.44.

2.4.2.3.6. Deletion and retention of endings in compounds.

323 Compounds are nominal bases (*prātipadika*: A 1.2.46 [48]). In general, then, endings of constituent padas are deleted, according to A 2.4.71 (278, 301). There are particular compounds, however, in which endings of some constituents are not dropped. Sūtras under the heading of

A 6.3.1: **अलुगुत्तरपदे।** (*alug uttarapade*)

provide for not deleting (*aluk* 'absence of zero') nominal endings of padas in compounds, before a following constituent (*uttarapade*) under given conditions. For example, by A 2.1.36 (308), *ātman-e* 'for oneself' combines, as the first member (A 1.2.43, 2.2.30 [319]) of a tatpuruṣa compound, with *pada-s* 'word, term': *ātman-e-pada-s*. The ending of the second constituent is deleted, but not that of the first component, in the derivate *ātmanepada* used as a grammatical term; similarly, one has *parasmaipada*, in which *parasmai* (< *para-e*) retains its ending. Accordingly,

A 6.3.7: **वैयाकरणाख्यायाञ्चतुर्थ्याः (आत्मनः)**

(*vaiyākaraṇākhyāyāñ caturthyāḥ* [*ātmanaḥ* 6])

A 6.3.8: **परस्य च।** (*parasya ca*)

provide that a fourth-triplet ending is not deleted (*caturthyāḥ* [*aluk*]) if it is used with the first constituents *ātman* (*ātmanaḥ*) and *para* (*parasya*) in a derivate which is a technical term used by grammarians (*vaiyākaraṇākhyāyām*). By

A 6.3.12: **अमूर्धमस्तकात्स्वाङ्गादकामे (सप्तम्याः)**

(*amūrdhamastakāt svāṅgād akāme* [*saptamyāḥ* 9])

an ending of the seventh triplet (*saptamyāḥ*) is retained after a term denoting a body part (*svāṅgāt*) other than *mūrdhan*,

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mastaka 'head', before any constituent except *kāma* 'love' (*akāme*). For example, the bahuvrīhi (A 2.2.23 [317]) *kaṇṭhe-kāla* (A 2.2.35 [320]) has a constituent *kaṇṭhe* 'throat' in which a seventh-triplet ending has been retained: *kaṇṭhe* < *kaṇṭha-i*; but the first constituent of *mūrdhaśikha* 'one on whose head there is only a tuft of hair (a Brāhmaṇa)' lacks an ending. A seventh-triplet ending is optionally (*vibhāṣā*) retained after a term other than a time word (*akālāt*) before the constituents *śaya* 'one who reclines, lies', *vāsa* 'dwelling', *vāsin* 'one who dwells' (*śayavāsavāsiṣu*):

A 6.3.18: शयवासवासिष्वकालात् (विभाषा सप्तम्याः)
(*śayavāsavāsiṣv akālāt* [*vibhāṣā* 16, *saptamyāḥ* 9])

E.g., *kheśaya* / *khaśaya* 'one who lies in heaven' (A 3.2.15, 2.2.19 [295, 315]).

A 6.3.21: षष्ठ्या आक्रोशे (*ṣaṣṭhyā ākrośe*)

A 6.3.22: पुत्रेऽन्यतरस्याम् (*putre'nyatarasyām*)

concern sixth-triplet endings in first constituents of compounds (A 2.2.8 [301]) used to convey abuse (*ākrośe*). An ending is generally retained, but only optionally (*anyatara-syām*) if the second constituent is *putra* 'son' (*putre*); e.g., *caurasyakula* 'crook's family', *dāsyāḥputra* / *dāsīputra* 'son of a slave woman'.

2.4.2.3.7. Special number rules for compounds.

324 There are instances where A 1.4.21-22 (234) cannot apply straightforwardly to regulate the choice of nominal affixes. For some compounds, although their meanings are such as would allow the use of bahuvacana affixes, are used with ekavacana endings. For example, the dvigu compound (A 2.1.51-52 [313-314]) *pañcapūlī* refers to five bundles (*pañca pūlāḥ*) that form a group (*samāhṛtāḥ*), but one says *pañcapūlī* (nom. sg. < *pañcapūlī-s*), using a singular form. Accordingly, in

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A 2.4.1: द्विगुरेकवचनम्। (*dvigur ekavacanam*)

Pāṇini provides that a dvigu compound has singular value (*ekavacanam*). That is, a derivate of the type *pañcapūlī* is treated as denoting a single entity, so that it takes ekavacana endings by A 1.4.22.

325 Similar provisions have to be made for particular dvandva compounds (A 2.2.29 [318]). Consider, for example, the following derivates: *pāṇipādam* 'hands and feet', *mārdaṅgika-pāṇavikam* 'mṛdaṅga and paṇava players', *rathikāśvāroham* 'charioteers and cavalry'; *ārāśastri* 'awl and knife'; *ahi-nakulam* 'snake and mongoose'. As is evident from the forms cited (nom.-acc. sg.), the compounds *pāṇipāda* and so on take ekavacana endings, although their meanings are not singular. Accordingly,

A 2.4.2: द्वन्द्वश्च प्राणितूर्यसेनाङ्गानाम्। (*dvandvaś ca prāṇitūryasenāṅgānām*)

A 2.4.6: जातिरप्राणिनाम्। (*jātir aprāṇinām*)

A 2.4.9: येषाञ्च विरोधः शाश्वतिकः। (*yeṣāñ ca virodhaḥ śāśvatikaḥ*)

let a dvanda also (*dvandvaś ca*) have singular value, if its constituents have particular meanings, as follows: **a.** parts of living beings, of a musical group or of an army (*prāṇitūryasenāṅgānām*); **b.** a general class (*jātiḥ*) of inanimate things (*aprāṇinām*); **c.** things between which there is perennial (*śāśvatikaḥ*) conflict (*virodhaḥ*). According to

A 2.4.10: शूद्राणामनिरवसितानाम्। (*śūdrāṇām aniravasitānām*)

a dvandva whose components denote Śūdras that are not excluded (*aniravasitānam*) is singular; e.g., *takṣāyaskāram* 'carpenter and smithy' (see 840). And by

A 2.4.13: विप्रतिषिद्धञ्चानधिकरणवाचि (विभाषा) (*vipratiṣiddhañ cānadhikaraṇavāci* [*vibhāṣā* 12])

a dvandva is optionally singular also if each of its constituents

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denotes a meaning that is the contrary of the other component's meaning (*vipratiṣiddham*), but does not refer to a substance (*anadhikaraṇavāci*); for example, *śītoṣṇa* used with reference to the opposed qualities cold and hot is optionally singular (*śītoṣṇam / śītoṣṇe*), but used with reference to cold and hot water (*udake* [nom.-acc. du.]) it is not (*śītoṣṇe*).

2.4.2.3.8. Gender rules for compounds.

326 Bahuvrīhi compounds such as *prāptodaka, uddhṛtaudana* (A 2.2.24 [317]) have referents distinct from those of their constituent padas, and their genders vary according to the genders connected with the referents in question. For example, *prāptodaka* used as a modifier of *grāma* in speaking of a village that water has gotten to is masculine (*prāptodako grāmaḥ*), but *uddhṛtaudana* linked with *sthālī* 'pot' in speaking of a pot from which rice has been taken is feminine (*uddhṛtaudanā sthālī*). Other compounds require special rules stating their genders. For such derivates include two or more bases, each of which is associated with its own gender. Nor can Pāṇini allow the genders of such compounds to be determined by which constituent's meaning is the chief one, since he does not class these derivates according to such semantic criteria. Moreover, using such criteria, one would have to let dvandva compounds formed from constituents with different genders have variable genders, which is not the case. Consequently, Pāṇini formulates special rules for the genders of dvandva, tatpuruṣa, and avyayībhāva compounds. By

A 2.4.26: परवल्लिङ्गन्द्वन्द्वतत्पुरुषयोः। (*paraval liṅgan dvandvatatpuruṣayoḥ*)

the gender (*liṅgam*) of a dvandva or a tatpuruṣa compound is that of the subsequent constituent (*paravat* 'like that of the following'). For example, the dvandvas (A 2.2.29 [318]) *mayūrī-kukkuṭa* (masc.) 'pea hen and cock', *kukkuṭamayūrī* (fem.) 'cock and pea hen' have the genders of *kukkuṭa* and *mayūrī*,

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respectively. The tatpuruṣas *rājapuruṣa* (masc.) 'king's servant', *rājabhāryā* (fem.) 'king's wife' (A 2.2.8 [301]), *ardhapippalī* (fem.) 'half a pepper' (A 2.2.2 [309]) have the genders of *puruṣa, bhāryā,* and *pippalī.*

A dvigu or dvandva which is singular by rules such as those in 324-325 is neuter (*napuṁsakam*), as is also an avyayībhāva compound:

A 2.4.17: स नपुंसकम्। (*sa napuṁsakam* [see 329])

A 2.4.18: अव्ययीभावश्च। (*avyayībhāvaś ca*)

Thus, *pāṇipāda, ārāśastri,* etc. are neuter, as is *adhistri* (A 2.1.6 [304]).

There are, of course, exceptions to these general rules. One example will serve to illustrate. By A 2.4.26, a dvandva whose second constituent is *vaḍavā* 'mare' would be feminine, but *aśvavaḍava* is masculine (e.g., nom-acc. du. *aśvavaḍavau*). Accordingly,

A 2.4.27: पूर्ववदश्ववडवौ। (*pūrvavad aśvavaḍavau*)

provides that the gender of this compound is that of its first component (*pūrvavat*).

327 A bahuvrīhi (A 2.2.24 [317]) *darśanīyabhārya* 'one whose wife is beautiful' derives from a sequence *darśanīyā-s bhāryā-s.* The last *-ā* of *darśanīyā-bhāryā* gotten by dropping the endings is replaced by *-a* (A 1.2.48 [322]). A special provision has to be made in order let the first constituent of the compound be *darśanīya-* instead of *darśanīyā-* (A 4.1.4 [271]). Similarly, *rūpavadbhārya* 'one whose wife is beautiful' has *rūpavad-* (< *rūpavat-*), not *rūpavatī-* (A 4.1.6), as in *rūpavatī bhāryā.* Therefore,

A 6.3.34: स्त्रियाः पुंवद्भाषितपुंस्कादनूङ् समानाधिकरणे स्त्रियामपूरणीप्रियादिषु। (*striyāḥ puṁvad bhāṣitapuṁskād anūṅ samānādhikaraṇe striyām apūraṇīpriyādiṣu*)

provides that a feminine item (*striyāḥ*) is treated as

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masculine (*pumvat*), that is, has the form of the masculine from the same base, under the following conditions: the item is such that, in the same base meaning; it has a masculine counterpart (*bhāṣitapumskāt*); it does not end in *ūṅ* (A 4.1.66); it is followed by a coreferential (*samānādhikaraṇe*) feminine item (*striyām*) which is neither part of the group beginning with *priyā* 'dear' nor contains an ordinal suffix (*apūraṇī-priyādiṣu*). Under the conditions given for a first constituent in A 6.3.34, the same provision is made for a first constituent in a karmadhāraya compound (A 1.2.42 [314]), although the exceptions concerning the second constituent do not hold, and the extension of masculine form is provided for also before the suffixes *jātīya, deśīya*:

A 6.3.42: पुंवत्कर्मधारयजातीयदेशीयेषु। (*pumvat karmadhārayajātīyadeśīyeṣu*)

For example, a karmadhāraya referring to a woman who is great (*mahatī*) and dear (*priyā*) is *mahāpriyā* (< *mahat-priyā*: A 6.3.46 [463]).

Remarks.

328 1. Pāṇini has to make provisions for the genders of bases derived by grammatical rules (326), not for genders associated with primitive bases. On the contrary, as is evident from sūtras like A 2.4.26, he assumes these to be known. The gender (*liṅgam*) of an underived base does not have to be taught (*aśiṣyam*) in the grammar, since this is based on usage (*lokāśrayatvāt*: लिङ्गमशिष्यं लोकाश्रयत्वाल्लिङ्गस्य। [Bhāṣya 1.390.18-19 and elsewhere]).

329 2. I have described the intent of A 2.4.17 (326), in accordance with the interpretation of most Pāṇinīyas, who take *sa* 'that' of the sūtra to refer not only to a dvandva but also to a dvigu compound. On the other hand, in A 2.4.30 vt. 2 (द्विगुश्च।), it is proposed that one must provide explicitly for

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dvigu compounds to be neuter, which implies that *sa* of A 2.4.17 is considered to refer only to a dvandva compound. Details of this issue will be considered in part V..2.2.

2.4.2.4. Taddhita affixes.

2.4.2.4.0. Introduction.

330 Taddhita affixes are introduced by sūtras of the section beginning with A 4.1.76 (70). They occur with nominal bases (*prātipadika*: A 1.2.45-46 [48]) and padas (A 1.4.14 [49]), verbal as well as nominal, although predominantly after the latter. Derivates formed with taddhitas are also of two kinds, as are compounds (301), according to whether the affix in question is obligatory or not. All such derivates are derived nominal bases (A 1.2.46). so that endings included in the padas to which they are introduced are deleted (A 2.4.71 [278]).

2.4.2.4.1. Affixes introduced optionally.

331 There is a series of taddhita suffixes which are introduced, by rules of the section beginning with A 4.1.82 (111), after padas that are syntactically and semantically related (*samartha*) with other padas. Given a pair of related padas P_1 P_2, a taddhita T is introduced after P_1 to form a derived nominal base P_1-T equivalent to and alternating with P_1P_2. For example, from the padas *upagu-as apatya-s* one can derive a syntactic string *upagor apatyam* 'descendant of Upagu'. In addition, the pada *upagu-as*, with a relational genitive ending (A 2.3.50 [251]), can be followed by the taddhita suffix *aṇ* (A 4.1.83 [335]) to form the derivate *upagu-as-a*. Since this is a derived nominal base, the ending *ñas* is dropped: *upagu-a* > *upago-a* (A 6.4.146 [504]) > *aupago-a* (A 7.2.117 [479]) > *aupagava* (A 6.1.78 [524]) 'descendant of Upagu'. A form of this derivate alternates with an equivalent string made up of two

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padas, one of which consists of *upagu* and a sixth- triplet ending and the other is a form of *apatya* 'offspring, descendant' or a synonymous term; e.g., *aupagavaḥ* = *upagor apatyam*.

The sūtra that serves to form *aupagava* and comparable derivates is

A 4.1.92: तस्यापत्यम् (*tasyāpatyam*)

This consists of two padas: *tasya*, genitive singular of *tad* 'that' used as a variable, and *apatyam* (nom. sg. nt.). In accordance with A 4.1.82, a taddhita affix is introduced optionally (*vā*) after the first (*prathamāt*) pada in question, namely one that is a value of *tasya* and is related to a term meaning 'offspring, descendant'. The resulting derivate is equivalent to and alternates with a string of the type *tasyāpatyam*.

332 A pada P_1 involved in such derivation may also be characterized by the shape of the pada's nominal base. For example, given P_1P_2 in which the first pada consists of a nominal base ending in short *a* (*at*: A 1.1.70 [85]) followed by a sixth-triplet ending and the second contains a base meaning 'offspring', the affix *iñ* follows P_1. This procedure accounts for a derivate such as *dākṣi* 'son of Dakṣa': *dakṣa-as-i* > *dakṣa-i* (A 2.4.71 [278]) > *dakṣ-i* (A 6.4.148 [504]) > *dākṣi* (A 7.2.117 [479]); *dākṣiḥ* = *dakṣasya putraḥ* 'son of Dakṣa'. Obviously, *dakṣasya putraḥ* conforms to the schema given in A 4.1.92 as much as *upagor apatyam* does. The difference between *aupagava* and *dākṣi* is that the former is accounted for by a general affixation (A 4.1.83) but the latter takes an affix that forms a derivate meaning specifically 'offspring of' and follows padas whose nominal bases end in *-a*. The rule which introduces *iñ* to form such a derivate is

A 4.1.95: अत इञ् (*ata iñ*)

The ablative *ataḥ* is construed, as a qualifier, with *prātipadikāt* of the major heading A 4.1.1 (105); it refers to a

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nominal base which ends in *-a* (A 1.1.72 [30]). Thus, together with A 4.1.92 and the headings A 4.1.1, 82, the sūtra A 4.1.95 is understood to provide that a pada which is a value of *tasya* takes the suffix *iñ* to form a derivate meaning 'offspring of ...' if its base ends in *-a*.

333 The nominal base of a P_1 to be followed by a taddhita affix can also be characterized semantically. Given related padas P_1P_2 such that the first contains a first-triplet ending and the second has an ending of the sixth triplet (*asya*), an affix appropriate to the phonological shape of the base in P_1 follows this pada if the base denotes a divinity (*devatā*). This is provided for in

A 4.2.24: सास्य देवता। (*sāsya devatā*)

The pada subject to receiving an affix is a value of *sā* ([nom. sg. fem.] < ... *tad-s*), coreferential with *devatā*. This rule serves to account for a derivate like *aindra*, as in *aindraṁ haviḥ* 'oblation dedicated to Indra': *indra-s-a* (affix *aṇ*: A 4.1.83 [335]) > *indra-a* > ... *aindra*.

334 The second term of a string such as *tasyāpatyam* (A 4.1.92 [331]) denotes the meaning that characterizes a derivate and is incorporated as part of its meaning. This is the affix's meaning (*pratyayārtha*). One aspect of this affixal meaning can be that what the derivate signifies is an object of an action (*karman*: e.g., A 1.4.49 [214]). For example, according to

A 4.2.1: तेन रक्तं रागात्। (*tena raktaṁ rāgāt*)

aṇ (A 4.1.83 [335]) follows a pada which is a value of *tena*, that is, one with a third-triplet ending, on condition that the base of this term denotes a coloring agent (*rāgāt*), to form a derivate which signifies something that has been colored (*raktam*). The term *raktam*, which specifies the affixal meaning, denotes an object of coloring (*kta*: A 3.4.70 [248, 289]); e.g., *kaṣāya-ā-a* > *kaṣāya-a* > ... *kāṣāya*, as in *kāṣāyaṁ vastram* = *kaṣāyeṇa raktaṁ vastram* 'a garment dyed with kaṣāya'.

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335 The sūtras which introduce a taddhita affix after a pada P_1 of related padas are basically arranged in the following way. Meanings that serve as conditions for introducing the affixes are domains for certain general affixes. Under such meaning conditions, other affixes can be introduced instead of the ones provided for in general, after padas that have particular characteristics. Thus, according to

A 4.1.83: प्राग्दीव्यतोऽण् (*prāg dīvyato'ṇ*)

aṇ is the general affix introduced after a P_1 under all the meaning conditions given in subsequent sūtras up to (*prāk* 'before') A 4.4.2: *tena dīvyati* ... (339). Under the same conditions, given in the same section of the Aṣṭādhyāyī,

A 4.1.85: दित्यदित्यादित्यपत्युत्तरपदाण्ण्यः।

(*dityadityādityapatyuttarapadāṇ ṇyaḥ*)

provides that *ṇya* follows a pada which contains a base *diti* 'Diti', *aditi* 'Aditi', *āditya* 'sun', or a compound whose second constituent is *pati* 'master, husband'; and according to

A 4.1.86: उत्सादिभ्योऽञ् (*utsādibhyo'ñ*)

añ is introduced after padas formed with bases of the group beginning with *utsa* 'water spring'.

Sūtras that give meaning conditions under which such affixes are allowed to occur are also headings valid for certain subsections, within which are also given particular affixes that occur when the base of a P_1 is specifically characterized by some semantic, grammatical, or phonological feature. For example, A 4.1.92 (331) heads a set of rules for forming taddhita derivates corresponding to a sequence P_1P_2 meaning 'offspring of ...'. The general taddhita for such derivates is *aṇ*, by A 4.1.83, as in *aupagava*, but if the base of P_1 is one of those given in A 4.1.85, one forms a derivate with *ṇya*; e.g., *daitya* 'descendant of Diti', *prājāpatya* 'descended from Prajāpati'. In addition, if the base of P_1 ends with *-a*, the affix introduced is *iñ* (A 4.1.95 [332]). However, *aṇ* is

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introduced if the base of P_1 is a member of the group that begins with *śiva* (*śivādibhyaḥ*), as in *śaiva*:

A 4.1.112: **शिवादिभ्योऽण्।** (*śivādibhyo'ṇ*)

On the other hand, if the base in *-a* is one of the specific subset listed as beginning with *tika*, then the taddhita introduced is *phiñ* (> *āyani*: A 7.1.2 [509]), as in *taikāyani*:

A 4.1.154: **तिकादिभ्यः फिञ्।** (*tikādibhyaḥ phiñ*)

In addition, as provided for by

A 4.1.168: **जनपदशब्दात्क्षत्रियादञ्।** (*janapadaśabdāt kṣatriyād añ*)

añ follows a P_1 whose base is the name of an area, a district (*janapadaśabdāt*), used with reference to a Kṣatriya (*kṣatriyāt*); e.g., *pāñcāla* 'offspring of a Pañcāla Kṣatriya'. Further, if the offspring in question is a gotra descendant (A 4.1.162 [78]), by

A 4.1.99: **नडादिभ्यः फक् (गोत्रे)** (*naḍādibhyaḥ phak* [*gotre*, 98])

A 4.1.105: **गर्गादिभ्यो यञ्।** (*gargādibhyo yañ*)

phak and *yañ* respectively follow P_1's whose bases belong to the groups beginning with *naḍa* and *garga* (*naḍādibhyaḥ*, *gargādibhyaḥ*). Moreover, according to

A 4.1.101: **यञिञोश्च।** (*yañiñoś ca*)

phak also occurs with a P_1 whose base contains *yañ* or *iñ*. For example, *nāḍi* and *gārgi* refer to immediate offsprings of Naḍa and Garga, but *nāḍāyana, gārgya* --- with *phak* and *yañ* --- refer to gotra descendants, and *gārgyāyaṇa* refers to a yuvan descendant (78) in the lineage of Garga.

The following sūtras also serve to form derivates with the meaning 'descendant of ...':

A 4.1.104: **अनृष्यानन्तर्ये विदादिभ्योऽञ्।** (*anṛṣyānantarye vidādibhyo'ñ*)

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A 4.1.143: स्वसुश्छः। (*svasuś chaḥ*)

A 4.1.144: भ्रातुर्व्यच्च। (*bhrātur vyac ca*)

The first rule introduces the suffix *añ* after padas containing bases of the group that begins with *vida* (*vidādibhyaḥ*). The affix serves to form derivates that denote gotra descendants, if the base in question refers to a ṛṣi; e.g., *vaida*. However, the list in question also contains terms that refer to people who are not ṛṣis. These bases enter into derivates that denote immediate descendants; e.g., *pautra* 'son's child', *dauhitra* 'daughter's child'. If, on the other hand, a pada P_1 contains *svasṛ* 'sister', then, according to A 4.1.143, the affix *cha* (> *īya*: A 7.1.2 [509]) is introduced, and by A 4.1.144, both this suffix and *vyat* alternately follow a pada with *bhrāṭṛ* 'brother': *svasrīya* 'sister's child', *bhrātrīya* / *bhrāṭṛvya* 'brother's child'.

336 A 4.2.24 (333) does not specify an affix to be introduced; except as otherwise provided for, the general affix *aṇ* occurs, by A 4.1.83 (335). But if the base of P_1 is *soma*, the taddhita allowed to occur is *ṭyaṇ*, and *ḍhak* (> *eya*: A 7.1.2 [509]) is introduced if the base is *agni*, as in *saumya* 'dedicated to Soma', *āgneya* 'dedicated to Agni':

A 4.2.30: सोमाट्ट्यण्। (*somāṭ ṭyaṇ*)

A 4.2.33: अग्नेर्ढक्। (*agner ḍhak*)

Under the conditions given in A 4.2.1 (334), the general affix *aṇ* is introduced, but *ṭhak* (> *ika*: A 7.3.50 [509]) follows a P_1 whose base is *lākṣā* 'lac' or *rocana* (a certain pigment), as in *lākṣika* 'dyed with lac':

A 4.2.2: लाक्षारोचनाट्ठक्। (*lākṣārocanāṭ ṭhak*)

337 Another sūtra of the section headed by A 4.1.83 (335) is

A 4.2.59: तदधीते तद्वेद। (*tad adhīte tad veda*)

which introduces an affix after a P_1 containing a second-triplet ending, to form a derived base meaning 'studies (*adhīte*) X

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(*tad*)', 'knows (*veda*) X'. Derivates such as *vaiyākaraṇa* (< *vyākaraṇa-am-a*) 'one who studies or knows grammar, a grammarian', *naimitta* (< *nimitta-as-a*) 'one who knows omens' are formed with *aṇ*. If, however, the base of P_1 is one of the set beginning with *krama*, the affix introduced under the conditions given is *vun* (> *aka*: A 7.1.1 [509]):

A 4.2.61: क्रमादिभ्यो वुन्। (*kramādibhyo vun*)

E.g., *kramaka* 'one who studies or knows the krama text of a Veda'.

338 A 4.4.1: प्राग्वहतेष्ठक्। (*prāg vahateṣ ṭhak*)

A 4.4.75: प्राग्घिताद्यत्। (*prāg ghitād yat*)

A 5.1.1: प्राक् क्रीताच्छः। (*prāk krītāc chaḥ*)

A 5.1.18: प्राग्वतेष्ठञ्। (*prāg vateṣ ṭhañ*)

are sūtras of the same kind as A 4.1.83 (335), providing for the occurrence of general affixes under conditions stated in rules of given sections, as follows: *ṭhak*: up to A 4.4.76 (... *vahati* ... [340]), *yat*: up to A 5.1.5 (... *hitam* [341]), *cha* (> *īya*: A 7.1.2 [509]): up to A 5.1.37 (... *krītam* [342]), *ṭhañ* (> *ika, ka*: A 7.3.50-51 [509]): up to A 5.1.115 (... *vatiḥ* [347]).

339 The following are examples of sūtras of the section beginning with A 4.4.1:

A 4.4.2: तेन दीव्यति खनति जयति जितम्। (*tena divyati khanati jayati jitam*)

A 4.4.3: संस्कृतम्। (*saṁskṛtam*)

A 4.4.5: तरति (*tarati*)

A 4.4.7: नौद्व्यचष्ठन्। (*naudvyacaṣ ṭhan*)

A 4.4.12: वेतनादिभ्यो जीवति। (*vetanādibhyo jīvati*)

A 4.4.14: आयुधाच्छ च। (*āyudhāc cha ca*)

A 4.4.51: तदस्य पण्यम्। (*tad asya paṇyam*)

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A 4.4.52: लवणाट् ठञ् (*lavaṇāṭ ṭhañ*)

The first six of these introduce an affix after a P_1 which is a value of *tena,* that is, after a pada with a third-triplet ending, to form derivates meaning: 'gambles (*dīvyati*) with X', 'digs (*khanati*) with X', 'conquers (*jayati*) with X', 'conquered (*jitam*) with X', 'prepared (*saṁskṛtam*) with X', 'crosses (*tarati*) by means of X', 'lives (*jīvati*) by means of X'; e.g., *ākṣika* 'one who plays with dice' (*akṣair dīvyati*), *ābhrika* 'one who digs with a spade' (*abhryā khanati*), *ākṣika* 'one who beats someone else at dice' (*akṣair jayati*), 'won with dice' (*akṣair jitam*), *dādhika* 'prepared with yogurt, curds' (*dadhnā saṁskṛtam*), *auḍupika* 'one who crosses water in a raft' (*uḍupena tarati*). A 4.4.7 provides that *ṭhan* occurs, instead of *ṭhak,* to form a derivate under the condition given in A 4.4.5, if the base of P_1 is *nau* 'boat' or a dissyllabic term (*naudvyacaḥ*); e.g., *nāvika* 'one who crosses by boat' (*nāvā tarati*), *bāhuka* 'one who crosses, swims across by means of his arms' (*bāhubhyāṁ tarati*). The first vowel of a derivate with *ṭhan* is high-pitched, but the first vowel of the affix *ṭhak* is so accented (A 6.1.197, 3.1.3 [600, 592]). A 4.4.12 specifies that an affix follows a pada whose base is one of those in the group beginning with *vetana* 'salary' (*vetanādibhyaḥ*); e.g., *vaitanika* 'one who lives on a salary' (*vetanena jīvati*). A 4.4.14 lets not only the suffix *ṭhak,* provided for by A 4.4.1, but also *cha* (*cha ca*) follow a pada formed with the base *āyudha* 'weapon', as in *āyudhika* / *āyudhīya* 'one who lives by his weapon' (*āyudhena jīvati*).

The last two sūtras introduce affixes after a P_1 that has a first-triplet ending (*tad*) to form derivates meaning 'X (*tad*) pertains to Y (*asya*)', on condition that the base of P_1 denotes something that Y has for sale (*paṇyam*). A 4.4.51 does not specify a particular affix, so that *ṭhak* applies, by A 4.4.1, but A 4.4.52 specifies that *ṭhañ* follows a P_1 whose base is *lavaṇa* 'salt' (*lavaṇāt*). For example, *āpūpika* 'one who sells

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apūpas (a kind of cake)' has *ṭhak*, but *lāvaṇika* 'one who sells salt' has *ṭhañ*. The first vowel of a derivate with *ṭhañ* is high-pitched (A 6.1.197 [600]).

340 A 4.4.76: **तद्वहति रथयुगप्रासङ्गम्** (*tad vahati rathayugaprāsaṅgam*) introduces *yat* (A 4.4.75 [338]) after a P_1 which contains a second-triplet ending (*tad*) following *ratha* 'chariot, car', *yuga* 'yoke', or *prāsaṅga* 'a kind of yoke', to form derivates meaning 'one who carries, transports ...' (*tad vahati*), as in *rathya* '(a draught animal) that draws a chariot', *yugya* '(an animal) that bears a yoke'. According to

A 4.4.77: **धुरो यड्ढकौ** (*dhuro yaḍḍhakau*)

A 4.4.80: **शकटादण्** (*śakaṭād aṇ*)

on the other hand, a P_1 whose base is *dhur* 'yoke' takes one of two affixes, either *yat* or *ḍhak*, and one whose base is *śakaṭa* 'cart' takes the suffix *aṇ*: *dhurya / dhaureya* '(an animal) that bears a yoke', *śākaṭa* '(an animal) that draws a cart'.

341 A 5.1.1 (338) gives *cha* as the affix that generally follows a pada under conditions to be given in the subsequent section, but according to

A 5.1.2: **उगवादिभ्यो यत्** (*ugavādibhyo yat*)

under all conditions stated in the section, if the base of the pada subject to affixation ends in a *u*-vowel or is one of the group that starts with *go* 'cow, ox', then the pada takes the suffix *yat* instead of *cha*. For example,

A 5.1.5: **तस्मै हितम्** (*tasmai hitam*)

provides that an affix follows a pada which is a value of *tasmai*, that is, one with a fourth-triplet ending, to form a derivate meaning 'beneficial (*hitam*) to X'. The pada *vatsa-e* takes *cha*, but *go-e* is followed by *yat*: *vatsīya* 'good for a calf', *gavya* 'good for a cow'.

342 In the section beginning with A 5.1.18 (338) there is a subsection that begins with

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A 5.1.19: **आर्हादगोपुच्छसङ्ख्यापरिमाणाट्ठक्।** (*ārhād agopucchasaṅkhyāparimāṇāṭ ṭhak*)

This provides that, under the meaning conditions given in subsequent sūtras, up to and including

A 5.1.63: **तदर्हति।** (*tad arhati*)

ṭhak is introduced instead of *ṭhañ*, except where the base of P_1 is *gopuccha* 'cow's tail, oxtail', a number word (*saṅkhyā*), or a term denoting a measure (*parimāṇa*). This subsection includes

A 5.1.37: **तेन क्रीतम्।** (*tena krītam*)

These rules let appropriate taddhitas follow a pada that is a value of *tad* to form a derivate meaning 'merits (*arhati*) X' and a pada that is a value of *tena* to form a derivate meaning 'bought (*krītam*) with X'. For example, *śvaitacchatrika* 'one who merits a white parasol' has *ṭhak* by A 5.1.19, but *gaupucchika* 'bought for a cow's tail', *ṣāṣṭika* 'bought for sixty ...', and *prāsthika* 'bought for a prastha (a particular measure)' have *ṭhañ* by the general rule A 5.1.18. Derivates with *ṭhañ* and *ṭhak* differ accentually: The first vowel of a base with *ṭhañ* is high-pitched (A 6.1.197 [600]), but the first vowel of the affix *ika*, which derives from *ṭhak* (A 7.3.50 [509]) is high-pitched (A 3.1.3 [592]).

Now, *naiṣkika* 'bought for a niṣka' and *úttamanaiṣkika* 'bought with the final niṣka' differ in accentuation. Accordingly,

A 5.1.20: **असमासे निष्कादिभ्यः।** (*asamāse niṣkādibhyaḥ*)

provides that *ṭhak* follows a pada under the conditions given, if the base in question is one of the group that begins with *niṣka* (a monetary unit) except in a compound (*asamāse*): *naiṣkika* has *ṭhak*, but *úttamanaiṣkika* has *ṭhañ* by A 5.1.18.

Another sūtra of the subsection headed by A 5.1.19 is

A 5.1.22: **सङ्ख्याया अतिशदन्तायाः कन्।** (*saṅkhyāyā atiśadantāyāḥ kan*)

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which introduces *kan* after a pada if its base is a number word (*saṅkhyāyāḥ*) other than one ending in *-ti* or *-śat* (*atiśadantāyāḥ*); e.g., *pañcaka* 'bought for five ...', with *kan*, but *sāptatika* 'bought for seventy (*saptati*)', and *cātvāriṁśatka* 'bought for forty (*catvāriṁśat*)', with *ṭhañ*.

343 There is a remainder (*śeṣa*) of possible conditions with respect to the meaning conditions given in taddhita affixation rules that come before

A 4.2.92: शेषे (*śeṣe*)

In connection with this, consider the derivates *bhānava* 'descendant of Bhānu' (*bhānavaḥ* = *bhānor apatyam*) and *bhānavīya* 'which pertains to Bhānu, of the sun, solar', *aupagava* 'which pertains to Upagu'. In accordance with Pāṇinian usage, let *idam* (nom. sg. nt.) 'this' be a variable whose values are padas denoting anything that is somehow related to something else, and let *tasya* (gen. sg. masc.-nt.) 'of this, of that' be a variable whose values are padas referring to any such other thing. A sūtra

A 4.3.120: तस्येदम्। (*tasyedam*)

then introduces a taddhita suffix to a P_1 that ends in a relational sixth-triplet ending (*tasya*), to form a derivate meaning 'Y (*idam*) related to X (*tasya*), Y of X'. Of course, being related to someone as his descendant is included in the very general set of possible relations covered by A 4.3.120. And indeed there are derivates like *aupagava*, which have both a very general relational meaning and a more specific meaning 'descendant of ...' But this is not always the case. For example, *bhānavīya* has a general relational meaning, but the patronymic related to *bhānu* is *bhānava*. The sūtra that accounts for *bhānavīya*,

A 4.2.114: वृद्धाच्छः। (*vṛddhāc chaḥ*)

provides that *cha* follows a P_1 under conditions to be given, if the base of this pada is a vṛddha element (A P1.1.73-74 [61]). The rule should not, however, allow *cha* after a pada *bhānu-as*

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in deriving a patronymic: *bhānava* should be derived with *aṇ*. For this and other comparable reasons, Pāṇini states rules such as A 4.3.120 in a section headed by A 4.2.92: Affixes are introduced by these rules under conditions that constitute a remainder with respect to those given earlier.

344 The section which A 4.2.92 (343) heads begins with rules specifying affixes other than the general suffix *aṇ*, which occur with padas characterized by particular bases. For example,

A 4.2.93: **राष्ट्रावारपाराद्घखौ।** (*rāṣṭrāvārapārād ghakhau*)

A 4.2.97: **नद्यादिभ्यो ढक्।** (*nadyādibhyo ḍhak*)

A 4.2.104: **अव्ययात्त्यप्।** (*avyayāt tyap*)

A 4.2.107: **दिक्पूर्वपदादसंज्ञायां ञः।** (*dikpūrvapadād asaṁjñāyāṁ ñaḥ*)

A 4.2.115: **भवतष्ठक्छसौ।** (*bhavataṣ ṭhakchasau* [*vṛddhāt* 114])

A 4.3.11: **कालाट् ठञ्** (*kālāṭ ṭhañ*)

A 4.3.16: **सन्धिवेलाद्यृतुनक्षत्रेभ्योऽण्।** (*sandhivelādy-ṛtunakṣatrebhyo'ṇ*)

A 4.3.18: **वर्षाभ्यष्ठक्।** (*varṣābhyaṣ ṭhak*)

provide for affixes with padas that contain particular bases, as follows: *rāṣṭra* 'kingdom', *avārapāra* 'the near and far banks of a river': *gha* and *kha* (> *iya, īna*: A 7.1.2 [509]), respectively, as in *rāṣṭriya, avārapārīṇa* ; bases of the set beginning with *nadī* 'river' (*nadyādibhyaḥ*): *ḍhak*(> *eya*: A 7.1.2, e.g., *nādeya*) ; an avyaya (54): *tyap* (e.g., *tatratya*); a compound whose first constituent is a direction word (*dikpūrvapadāt*) and is not used as a name (*asaṁjñāyām*): *ña* (e.g., *paurvaśāla*); *bhavat* (*bhavataḥ*), if this is a vṛddha element, that is, the pronominal *bhavatu* 'you' (A 1.1.74 [61]): *ṭhak* and *chas*(> *ka, īya*: A 7.3.51, 7.1.2, *bhāvatka / bhavadīya*); a time word (*kālāt*): *ṭhañ* (e.g., *māsika,* with *māsa* 'month'); particular time words: a group

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beginning with *sandhivelā* 'time of juncture, transition (at sunrise, noon, sunset)', season names (*ṛtu*), names of asterisms (*nakṣatra*), used to refer to particular times: *aṇ* (*sāndhivela, graiṣma* [*grīṣma* 'hot season'] *taiṣa* [*tiṣya* 'the asterism Tiṣya']); *varṣā* 'rain season': *ṭhak* (*vārṣi-ka*).

Subsequent sūtras, starting with A 4.3.25, give the sequences P_1P_2 to which derivates with these affixes correspond, together with additional conditions. For example:

A 4.3.25: **तत्र जातः।** (*tatra jātaḥ*) 'born (*jātaḥ*) in X (*tatra*)'

A 4.3.53: **तत्र भवः।** (*tatra bhavaḥ*) 'located (*bhavaḥ*) in or at X'

A 4.3.74: **तत आगतः।** (*tata āgataḥ*) 'come (*āgataḥ*) from X (*tataḥ*)'

A 4.3.85: **तद्गच्छति पथिदूतयोः।** (*tad gacchati pathidūtayoḥ*) 'goes (*gacchati*) to X (*tad*)', provided that what goes to the place in question is a path or a messenger (*pathidūtayoḥ*)

A 4.3.89: **सोऽस्य निवासः।** (*so'sya nivāsaḥ*) 'X (*saḥ*) is Y's (*asya*)', provided X denoted by the base of P_1 is a place where Y stays, lives (*nivāsaḥ*)

A 4.3.90: **अभिजनश्च।** (*abhijanaś ca*) 'X is Y's', provided the base of P_1 denotes an ancestral place of origin (*abhijanaḥ*)

A 4.3.101: **तेन प्रोक्तम्।** (*tena proktam*) 'enunciated (*proktam*) by X'

A 4.3.115: **उपज्ञाते।** (*upajñāte*) 'discovered (*upajñāte*) by X'

A 4.3.116: **कृते ग्रन्थे।** (*kṛte granthe*) 'produced (*kṛte*) by X', provided what has been produced is a text (*granthe*)

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Derivates formed with affixes given in earlier sūtras can correspond to various such P_1P_2 sequences. For example, *rāṣṭrīyaḥ* can refer to someone born in a kingdom (*rāṣṭre jātaḥ*), located there (*rāṣṭre bhavaḥ*), come from a kingdom (*rāṣṭrād āgataḥ*), to a path that leads to a kingdom (*rāṣṭraṁ gacchati*); *pāṇinīyam* can be used of a treatise (*śāstram*) propounded by Pāṇini, a grammar (*vyākaraṇam*) originated by Pāṇini, or any literary work produced by Pāṇini.

345 In the section which A 4.2.92 (343) heads, as in other sections of sūtras dealing with taddhita affixes, there are subsections concerning given meaning conditions, under which particular suffixes are given for padas with specific bases. For example, under the subsection beginning with A 4.3.53 (344),

A 4.3.55: शरीरावयवाच्च (यत्) (*śarīrāvayavāc ca* [*yat* 54])

A 4.3.62: जिह्वामूलाङ्गुलेश्छः। (*jihvāmūlāṅguleś chaḥ*)

provide for introducing *yat* after a pada whose base denotes a part of the body (*śarīrāvayavāt*) in general, but *cha* if the base is *jihvāmūla* 'root of the tongue' or *aṅguli* 'finger'; e.g., *dantyaḥ* 'dental' (= *danteṣu bhavaḥ*), *jihvāmūlīyaḥ* 'located at the root of the tongue' (= *jihvāmūle bhavaḥ*). Under the conditions given in A 4.3.90,

A 4.3.94: तूदीशलातुरवर्मतीकूचवाराड् ढक्छण्ढञ्यकः।
(*tūdīśalāturavarmatīkūcavārāḍ ḍhakchaṇḍhañyakaḥ*)

ḍhak, *chaṇ*, *ḍhañ*, and *yak* respectively are introduced after padas whose bases are the place names *tūdī* (*taudeya*), *śalātura* (*śālāturīya* [see 5]), *varmatī* (*vārmateya*), *kūcavāra* (*kaucavārya*).

346 The meanings of certain derivates with taddhita affixes include particular time references. Thus, *jātaḥ*, *āgataḥ*, *proktam* of A 4.3.25, 74, 101 (344) are participial forms used if an act is referred to past time (*bhūte*: A 3.2.102 [294]).

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Similarly,

A 5.2.94: तदस्यास्त्यस्मिन्निति मतुप्। (*tad asyāsty asminniti matup*)

includes a time reference in the conditions for introducing *matup*. This affix follows a pada with a first-triplet ending (*tad*) to form derivates corresponding to *tad asyāsti* 'Y has X', *tad asmin nasti* 'X is (*asti*) in or on Y (*asmin*)'; e.g., *gomat* 'one who has many cows' (*gomān* = *gāvo'sya santi*), *vṛkṣavat* 'something in or on which there are trees' (*vṛkṣavān* = *vṛkṣā asmin santi*). The form *asti* 'is' has reference to present, current time.

Other affixes also occur under the conditions given in A 5.2.94; for example:

A 5.2.115: अत इनिठनौ। (*ata iniṭhanau*)

A 5.2.121: अस्मायामेधास्रजो विनिः। (*asmāyāmedhāsrajo viniḥ*)

A pada with a base in *-a* (*ataḥ*) takes *ini* or *ṭhan*, as in *daṇḍin* and *daṇḍika* 'someone who has a staff (*daṇḍa*)'. *vini* follows a pada whose base ends in *-as* or one that contains the base *māyā* 'wile, deceptive power', *medhā* 'wisdom', *sraj* 'garland', as in *yaśasvin* 'famous', *māyāvin* 'wily', *medhāvin* 'wise', *sragvin* 'garlanded' (< *sraj-vin* : A 8.2.30 [544]).

347 Some derivates formed with taddhita suffixes are avyayas (54). For example,

A 5.1.115: तेन तुल्यं क्रिया चेद्वतिः। (*tena tulyaṁ kriyā ced vatiḥ*)

introduces *vati* after a pada which is a value of *tena* to form a derivate meaning 'like X' (*tena tulyam*), if what is similar is an action (*kriyā*), and by

A 5.1.116: तत्र तस्येव। (*tatra tasyeva*)

vati follows padas that are values of *tatra, tasya* to form derivates meaning 'like (*iva*) ... at X, similar to ... of X'. The gaṇa which begins with *svar* includes *vat*, so that a derivate

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with this suffix is an avyaya by A 1.1.37; e.g., *brāhmaṇavat* 'like a Brāhmaṇa, in the manner of a Brāhmaṇa', *pāṭaliputravat* 'like ... at Pāṭaliputra', as in

(98) ब्राह्मणवद्वर्तते। (*brāhmaṇavad vartate*) '... behaves like a Brāhmaṇa.'

(99) पाटलिपुत्रवत्साकेते परिखा। (*pāṭaliputravat sāketa parikhā*) 'The moat at Sāketa is like the one at Pāṭaliputra.'

According to

A 5.3.42: सङ्ख्याया विधार्थे धा। (*saṅkhyāyā vidhārthe dhā*)

the affix *dhā* follows a number word (*saṅkhyāyāḥ*: see 59) used in the sense of *vidhā* 'manner' (*vidhārthe*); e.g., *ekadhā* 'in one way'.

A 5.4.17: सङ्ख्यायाः क्रियाभ्यावृत्तिगणने कृत्वसुच्। (*saṅkhyāyāḥ kriyābhyāvṛttigaṇane kṛtvasuc*)

A 5.4.18: द्वित्रिचतुर्भ्यः सुच्। (*dvitricaturbhyaḥ suc*)

A 5.4.19: एकस्य सकृच्च। (*ekasya sakṛc ca*)

also serve to derive avyaya derivates from terms with number words, if these are used with reference to counting the times an act is performed (*kriyābhyāvṛttigaṇane*). In general, such derivates have the suffix *kṛtvasuc*, as in *pañcakṛtvas* 'five times'. Comparable derivates from padas with *dvi* 'two', *tri* 'three', *catur* 'four', however, take the affix *suc*, and this also occurs with *eka* 'one', which is then replaced by *sakṛt*: *dvis* 'twice', *tris* 'three times', *catus* 'four times', *sakṛt* 'once'.

A 5.4.50: कृभ्वस्तियोगे सम्पद्यकर्तरि च्विः। (*kṛbhvastiyoge sampadyakartari cviḥ*)

introduces *cvi* after a pada that refers to an agent of becoming (*sampadyakartari*), if it is used with *kṛ* 'make', *bhū* 'be, become', or *as* 'be' (*kṛbhvastiyoge*). For example, *śvetī karoti* 'makes white' is equivalent to *śvetaṁ karoti*; the pada

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śveta-am is optionally followed by *cvi*: *śveta-am-v* > *śveta-v* (A 2.4.71 [278]) > *śveta* (A 6.1.67 [409]) > *śvetī* (A 7.4.32 [485]). A derivate with *cvi* belongs to the gati class (A 1.4.61 [55]), so that it is an avyaya. Under the conditions given in A 5.4.50, *sāti* is introduced optionally (*vibhāṣā*) if the additional sense of an agent's totally becoming something (*kārtsnye*) is understood:

A 5.4.52: **विभाषा साति कार्त्स्न्ये।** (*vibhāṣā sāti kārtsnye*)

For example: *agnisād bhavati / agnī bhavati* 'totally becomes fire, is engulfed in flames'. See also 357.

348 Special provision is made in a section of taddhita affixation rules to allow several suffixes to alternate. By

A 5.1.119: **तस्य भावस्त्वतलौ।** (*tasya bhāvas tvatalau*)

tva or *tal* follows a pada with a sixth-triplet ending (*tasya*) to form a derivate that denotes the property of being (*bhāvaḥ*) what the base of the pada denotes; e.g., *puruṣatvam, puruṣatā* (= *puruṣasya bhāvaḥ*) 'the property of being a man, manhood'. Under the same conditions,

A 5.1.122: **पृथ्वादिभ्यइमनिज्वा।** (*pṛthvādibhya imanij vā*)

introduces *imanic* after padas whose bases contain nominals of the group that begins with *pṛthu* 'broad'. The sūtra lets *imanic* occur optionally (*vā*), so that it allows also for other affixes, which could obtain by other rules. For example,

A 5.1.131: **इगन्ताच्च लघुपूर्वात्(अण्)** (*igantāc ca laghupūrvāt* [*aṇ* 130])

introduces *aṇ* after a pada whose base ends in a vowel denoted by the abbreviation *ik* (see 129), if a preceding vowel in the base is also light (*laghupūrvāt*: A 1.4.10 [37]). By A 5.1.122, 131, then, derivates such as *prathiman* (< ... *pṛthu-iman*), *pārthava* (< ... *pṛthu-a*) 'breadth' are formed. In addition,

A 5.1.120: **आ च त्वात्।** (*ā ca tvāt*)

stipulates that *tva* and *tal* also (*ca*) occur under all the special conditions given in subsequent rules, through

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A 5.1.136: ब्रह्मणस्त्वः। (*brahmaṇas tvaḥ*)

which introduces *tva*. Thereby, derivates such as *pṛthutva, pṛthutā* 'breadth' are also accounted for. Moreover, in accordance with A 4.1.82 (111), each such derivate alternates with a sequence of padas: *pṛthutvam, pṛthutā, prathimā, pārthavam = pṛthor bhāvaḥ.*

349 Certain taddhitas are introduced optionally after padas that have endings of particular triplets but are not necessarily construed with second padas in specific syntactic schemas. The procedure is best illustrated with rules that provide for taddhita affixes after padas with the following bases: *bahu* 'much, many', pronominals (*sarvanāman* : 53), excluding all members but *kim* (interrogative) of the subset of pronominals that starts with *dvi*:

A 5.3.2: किंसर्वनामबहुभ्योऽद्व्यादिभ्यः।

(*kiṃsarvanāmabahubhyo'dvyādibhyaḥ*)

Some of the affixes in question are introduced merely after padas with specified endings. Thus, according to

A 5.3.7: पञ्चम्यास्तसिल्। (*pañcamyās tasil*)

A 5.3.10: सप्तम्यास्त्रल्। (*saptamyās tral*)

tasil follows a pada with a fifth-triplet ending (*pañcamyāḥ*), *tral* a pada with an ending of the seventh triplet (*saptamyāḥ*); *tatas* and *tatra* are equivalent to and alternate with items such as *tasmāt* (abl. sg. masc.-nt.), *tasyāḥ* (abl. sg. fem) and *tasmin* (loc. sg. masc.-nt.), *tasyām* (loc. sg. fem.). Contrary to A 5.3.10, padas in which seventh-triplet endings follow *idam* 'this' and *kim* take the suffixes *ha* and *at*, respectively:

A 5.3.11: इदमो हः। (*idamo haḥ*)

A 5.3.12: किमोऽत्। (*kimo't*)

The equivalents to *asmin, kasmin* are *iha, kva*. Moreover, certain affixes follow padas with seventh-triplet endings after particular bases under the additional condition that reference is made to a time (*kāle*):

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A 5.3.15: **सर्वैकान्यकिंयत्तदः काले दा।**
(*sarvaikānyakiṁyattadaḥ kāle dā*)

A 5.3.16: **इदमोऽर्हिल्।** (*idamo'rhil*)

A 5.3.18: **दानीञ्च।** (*dānīñ ca*)

A 5.3.19: **तदो दा च।** (*tado dā ca*)

Under these conditions, *dā* follows padas that contain the bases *sarva* 'all, whole', *eka* 'one', *anya* 'other', *kim*, the relative pronoun *yad*, or *tad* 'that'; both *arhil* and *dānīm* follow a pada with *idam* 'this', and a pada with *tad* takes *dā* as well as *dānīm*; e.g., *sarvadā* 'always' (= *sarvasmin kāle*), *etarhi / idānīm* 'now' (= *asmin kāle*), *tadā / tadānīm* 'then' (= *tasmin kāle*).

Other suffixes occur with padas terminating in endings of the seventh (*saptamī*), fifth (*pañcamī*), or first (*prathamā*) triplets, provided the endings follow direction words (*dikśabdebhyaḥ*) used with reference to directions, places, or times (*digdeśakāleṣu*). Under these conditions, *astāti* is introduced:

A 5.3.27: **दिक्शब्देभ्यः सप्तमीपञ्चमीप्रथमाभ्यो दिग्देशकालेष्वस्तातिः।** (*dikśabdebhyaḥ saptamīpañcamīprathamābhyo digdeśakāleṣv astātiḥ*)

If, however, the particular direction word is *dakṣiṇa* 'right, south' or *uttara* 'left, north', instead of *astāti*, one has *atasuc* or *āti*, which also occurs if the direction word is *adhara* 'lower, below':

A 5.3.28: **दक्षिणोत्ताराभ्यामतसुच्।**
(*dakṣiṇottarābhyām atasuc*)

A 5.3.34: **उत्तराधरदक्षिणादातिः।**
(*uttarādharadakṣiṇād ātiḥ*)

E.g., *purastāt* 'in the east' (< *pūrva-i-astāt*), 'from the east' (< *pūrva-as-astāt*), 'the east' (< *pūrva-s-astāt*), *dakṣiṇatas /*

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dakṣiṇāt'... south'. Padas covered by A 5.3.34, excepting those with fifth-triplet endings (*apañcamyāḥ*), also optionally (*anyatarasyām*) take the suffix *enap,* on condition that reference is made to a place not far off (*adūre*):

A 5.3.35: **एनबन्यतरस्यामदूरेऽपञ्चम्याः।** (*enab anyatarasyām adūre'pañcamyāḥ*)

E.g., *uttaratas / uttarāt / uttareṇa.*

Remarks.

350 1. The order of padas such as *upagoḥ* and *apatyam,* corresponding to a derived term such as *aupagavaḥ* is not fixed: *upagor apatyam* or *apatyam upagoḥ* are interchangable (cf. 217-218). In sūtras such as A 4.1.92 (331), however, the order of padas cannot be free: A term such as *tasya,* whose value is a pada to which a taddhita is introduced optionally in accordance with A 4.1.82 (111) must come first.

351 2. The Kāśikā gives a very loose paraphrase of A 4.1.95 (332): **अकारान्तात्प्रातिपदिकादिञ्प्रत्ययो भवति।** 'The affix *iñ* occurs after a nominal base that ends in *a* .' It paraphrases comparable sūtras in a similar fashion. A parapahrase such as the following (SK 2.302) is more precise: **अदन्तं यत्प्रातिपदिकं तत्प्रकृतिकात् षष्ठ्यन्तादिञ् स्यादपत्यार्थे।** 'Let *iñ* occur in the meaning "descendant" after a term that terminates with an ending of the sixth triplet whose base ends in *a*.'

352 3. In sūtras like A 4.1.83 (see 335, 338), Pāṇini is concerned with sections of meanings which condition the introduction of affixes. For example, the section of rules in which *cha* is introduced actually extends only to A 5.1.18, which begins a new section. Hence, one might suggest that A 5.1.1 should actually read **प्राक्ठञश्छः।** (*prāk ṭhañaś chaḥ*). However, Pāṇini is providing for sections of meanings: A 5.1.1 begins a section in which affixes are introduced when there

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are particular P_1P_2 sequences; *ṭhañ* is valid for all the meanings provided thereby in rules up to A 5.1.37 (342); for the rules between A 5.1.18 and A 5.1.37 do not state any new P_1P_2 sequences, only particular affixes that occur after padas with specified bases. [Cf. Kāś. II.465 (on A 5.1.1): **अर्थोऽवधित्वेन गृहीतः न प्रत्ययः। तेन प्राक्ठञश्छ इति नोक्तम्।** 'Meaning is taken as the boundary, not an affix. Therefore, (Pāṇini) has not said *prāk ṭhañāś chaḥ*.']

353 4. A 4.1.101 (335) does not explicitly say that *phak* occurs to designate a yuvan descendant, but Pāṇini does not have to say this in the sūtra. A 4.1.94: **गोत्राद्यून्यस्त्रियाम्।** (*gotrād yūny astriyām*) provides that, except in the case of feminines (*astriyām*), an affix used with reference to a yuvan descendant (*yūni*) follows a gotra affix (*gotrāt*), and according to A 4.1.93: **एको गोत्रे।** (*eko gotre*), only one (*ekaḥ*) taddhita affix is allowed to occur to signify a gotra descendant.

2.4.2.4.2. Other taddhita affixes.

354 There are other groups of taddhitas introduced by rules organized in the way I described earlier (see 335-339). Thus,

A 5.3.70: **प्रागिवात्कः।** (*prāg ivāt kaḥ*)

states a general affix, valid for subsequent rules, up to

A 5.3.96: **इवे प्रतिकृतौ।** (*ive pratikṛtau*)

The taddhita suffix *ka* is introduced under the meaning conditions given. Under all these conditions, however, the affix *akac* occurs with avyayas and pronominals (*avyayasarvanāmnām*: see 53-54); moreover, this affix occurs in a particular position: before (*prāk*) that segment of these items that begins with the last vowel (*ṭeḥ*: A 1.1.64 [41]):

A 5.3.71: **अव्ययसर्वनाम्नामकच् प्राक्टेः।**
(*avyayasarvanāmnām akac prāk ṭeḥ*)

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Subsequent sūtras given meanings that condition the use of such taddhitas. For example,

A 5.3.73: **अज्ञाते।** (*ajñāte*)

A 5.3.74: **कुत्सिते।** (*kutsite*)

A 5.3.76: **अनुकम्पायाम्।** (*anukampāyām*)

A 5.3.85: **अल्पे।** (*alpe*)

A 5.3.86: **ह्रस्वे।** (*hrasve*)

provide for the affixes to occur when something's being unknown (*ajñāte*) or despised (*kutsite*) is conveyed, if one is to convey pity (*anukampāyām*) with respect to something, and when something is qualified as of little quantity (*alpe*) or small, short (*hrasve*). For example, *aśvaka* is used with reference to a horse of unknown ownership, a miserable or pitiable horse, *putraka* refers to a pitiable boy, *tailaka* to a small amount of oil, and *vṛkṣaka* to a small tree. These derivates contain *ka*, but *uccakais* (*uccais* 'high up, loud') *ahakam* (*aham* [nom. sg.] 'I'), used with comparable shades of meaning, have *akac*.

In addition, particular affixes are provided for with specified items under the meaning conditions given earlier. For example, A 5.3.86 allows for the general affix *ka* as well as *akac*, but by

A 5.3.88: **कुटीशमीशुण्डाभ्यो रः।** (*kuṭīśamīśuṇḍābhyo raḥ*)

ra occurs under the same meaning qualification with the bases *kuṭī* 'hut', *śamī* 'Śamī tree', *śuṇḍā* 'elephant's trunk': *kuṭīra* 'small hut', *śamīra* 'small Śamī tree', *śuṇḍāra* 'small trunk'.

355 Derivates provided for by sūtras such as those given in 354 are clearly different from derivates like *aupagava*, which are formed by introducing taddhita affixes to padas of P_1P_2 sequences specified in rules (331). They are also different from derivates of the type *tatas, tatra* (349): A base such as *tatra* is equivalent to and alternates with a pada like *tad-i* (>

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tasmin, tasyām), to which the taddhita suffix is introduced.

In addition, a derivate such as *avika* 'sheep', formed with the suffix *ka* by

A 5.4.28: **अवेः कः।** (*aveḥ kaḥ*)

differs not only from the types *aupagava* and *tatra* but also from a derivate like *śuṇḍāra*, in that it contains a redundant affix: *avi* and *avika* do not differ in meaning; both mean 'sheep'. Accordingly, A 5.4.28 does not give any condition for introducing the affix. But a derivate like *śuṇḍāra* is not equivalent to *śuṇḍā*. In effect, suffixes such as *ra* in *śuṇḍāra* are required for expressing the meanings in question by means of nominal bases that include the items with which the suffixes occur. Pāṇinīyas characterize these as obligatory (*nitya*) affixes.

356 The following sūtras also provide for nitya affixes:

A 5.3.55: **अतिशायने तमबिष्ठनौ।** (*atiśāyane tamabiṣṭhanau*)

A 5.3.56: **तिङश्च।** (*tiṅaś ca*)

A 5.3.57: **द्विवचनविभज्योपपदे तरबीयसुनौ।** (*dvivacanavibhajyopapade tarabīyasunau*)

A 5.3.58: **अजादी गुणवचनादेव।** (*ajādī guṇavacanād eva*)

A 5.3.66: **प्रशंसायां रूपप्।** (*praśaṁsāyāṁ rūpap*)

A 5.3.67: **ईषदसमाप्तौ कल्पब्देश्यदेशीयरः।** (*īṣadasamāptau kalpabdeśyadeśīyaraḥ*)

A 5.3.68: **विभाषा सुपो बहुच् पुरस्तात्तु।** (*vibhāṣā supo bahuc purastāt tu*)

A 5.3.112: **पूगाञ्ञोऽग्रामणीपूर्वात्।** (*pūgāñ ñyo'grāmaṇīpūrvāt*)

The first two of these rules let *tamap* and *iṣṭhan* follow not only a nominal pada but also one with a verb ending (*tiṅaḥ*) on condition that excellence is to be conveyed (*atiśāyane*); e.g., *āḍhyatama* 'exceedingly rich, most rich', *paṭiṣṭha* (<

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paṭu-iṣṭha : A 6.4.155 [505]) 'exceedingly, most sharp', *pacati-tamām* (< *pacati-tama-ām*: A 5.4.11, 6.4.148 [357, 504]) 'cooks exceedingly well, cooks best of all'. After padas of the types covered by A 5.3.55-56, the sūtra A 5.3.57 provides for introducing *tarap, īyasun* if the pada in question is related to a cooccuring item denoting two things or something from which another is distinguished (*dvivacanavibhajyopapade*), as in *āḍhyatara, paṭīyas, pacatitarām*. For example, in

(100) द्वाविमावाढ्यौ। अयमनयोरतिशयेनाढ्यः।

(*dvāv imāv āḍhyau/ ayam anayor atiśayenāḍhyaḥ*)

'These two men are rich; of the two, this one is rich to a greater degree (*atiśayena*).'

the pada *āḍhyas*(> *āḍhyaḥ*) is related to *anayoḥ* (< *idam-os*) 'of these two', which refers to two men. Here, both *anayos* and *atiśayena* 'exceedingly' are used. The derivate *āḍhyatara* conveys the meaning of a collocation like *anayor atiśayenāḍhyaḥ*. *āḍhyatarāḥ* in *pāṭaliputrakebhya āḍhyatarāḥ* 'richer than the inhabitants of Pāṭaliputra' contains a derivate formed to a term construed with an item referring to something from which another is distinguished. According to A 5.3.58, the vowel-initial (*ajādī*) affixes provided for by preceding sūtras --- that is, *iṣṭhan* and *īyasun* --- occur only after padas whose bases are guṇavacana terms (*guṇavacanād eva* 'only after a guṇavacana' [see 273-275]). Thus, one has both *paṭiṣṭha, paṭīyas* (with *iṣṭhan, īyasun*) and *paṭutama, paṭutara* (with *tamap, tarap*) and the suffixes *tamap, tarap* are allowed after padas with verb endings or padas formed from terms such as *kartṛ* 'one who does, makes', *pācaka* 'one who cooks', but *iṣṭhan* and *īyasun* are not used with items such as these. A 5.3.66 provides for the suffix *rūpap* on condition that praise is to be conveyed (*praśaṁsāyām*). On the other hand, by A 5.3.67 the suffixes *kalpap, deśya, deśīyar* occur if whatever a given pada signifies is qualified as lacking (*īṣadasamāptau* 'being slightly incomplete'), being almost, approximately something; and according to A 5.3.68, under the

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same condition, *bahuc* is added optionally (*vibhāṣā*) to a nominal pada (*supaḥ*); instead of following the pada, as do the affixes with which it alternates, however, *bahuc* precedes it (*purastāt tu*). For example: *vaiyākaraṇarūpa* 'a true grammarian', *pacatirūpam* 'cooks well', *paṭukalpa / paṭudeśya / paṭudeśīya* 'fairly (but not fully) sharp, sharpish', *pacatikalpam* 'cooks pretty well', *bahupaṭu* 'fairly sharp'. A 5.3.112 introduces *ñya* redundantly after a term denoting a gang (*pūgāt*) provided this does not contain as a prior element a word referring to a village head (*agrāmaṇīpūrvāt*); e.g., *lauhadhvajya* 'red-flag' refers to one of a gang that has a red flag as its emblem.

357 Certain nitya taddhita affixes form derivates that belong to the avyaya class by A 1.1.37 (54). The suffixes *dhā, kṛtvasuc,* and *suc* (A 5.3.42, 5.4.17–19 [347]) are of this type, as is *āmu,* introduced by:

A 5.4.11: **किमेत्तिङव्ययघादाम्वद्रव्यप्रकर्षे।**

(*kimettiṅavyayaghād āmv adravyaprakarṣe*)

This rule lets *āmu* occur after a pada with a gha suffix (A 1.1.22 [73]) following *kim* (interrogative pronoun), a pada in *-e,* one with a verb ending, or an avyaya (*kimettiṅavyayaghāt*), provided the gha suffix is used to convey excellence in respect of something other than a substance (*adravyaprakarṣe*); e.g., *pacatitamām* 'cooks exceedingly well, most well', *uccaistamām* 'exceedingly high up, loudly', but *uccaistama* 'exceedingly high', used with reference to something like a tree (nom. sg. *uccaistamo vṛkṣaḥ*).

358 *yuvati* 'young female' should be a prātipadika, so as to take nominal endings (A 4.1.1 [105]): *yuvatiḥ, yuvatī, yuvatayaḥ,* and so on. In addition, *yuvati* is clearly related to *yuvan* 'young one'. Therefore, as provided for in

A 4.1.77: **यूनस्तिः।** (*yūnas tiḥ*)

the taddhita suffix *ti* is introduced after *yuvan* used in the feminine (*striyām*: A 4.1.3 [107]). *yuvan-* of *yuvan-ti* is a pada (A 1.4.17 [75]), so that its *-n* is deleted (A 8.2.7 [539]). Since

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ti is a taddhita, moreover, the derivate *yuvati* is a derived nominal base (*prātipadika*: A 1.2.46 [48]), hence is followed by nominal endings.

359 Consider now the derivates *ākṣadyūtika* 'which has been brought about by gambling at dice' (*ākṣadyūtikam = akṣadyūtena nirvṛttam*) and *kṛtrima* 'artificial', *paktrima* 'which has been made by cooking, baking'. The first is accounted for by a sūtra of the section that begins with A 4.4.1 (338):

A 4.4.19: **निर्वृत्तेऽक्षद्यूतादिभ्यः (तेन)**

(*nirvṛtte'kṣadyūtādibhyaḥ* [*tena* 2])

This rule lets *ṭhak* optionally follow a pada in which a third-triplet ending follows a base of the set beginning with *akṣadyūta* 'gambling with dice', in the sense 'brought about by ...' (*nirvṛtte*). A derivate such as *paktrima* has a comparable meaning: The base of the pada to which an affix is introduced to form this should be a nominal meaning 'cooking, baking', just-as *dyūta* is a derivate meaning 'gambling'. Moreover, there are derivates which contain a taddhita suffix of the shape *ma*, such as *dyuma* 'light' or *druma* 'tree'. These are accounted for by

A 5.2.108: **द्युद्रुभ्याम्मः।** (*dyudrubhyām maḥ*)

which introduces *ma* after padas in which a first-triplet ending follows *dyu* 'sky' or *dru* 'wood'. Accordingly, *paktrima* can justifiably be analyzed as consisting of three segments: the verb *pac* 'cook, bake', an action-noun suffix *tri*, and a taddhita suffix *ma*. On the other hand, a derivate like *paktri* 'cooking, baking' simply does not have independent status. Hence, Pāṇini proceeds as follows. First, he introduces *ktri* after *pac* to form *paktri* (A 3.3.88 [291]), then, by

A 4.4.20: **क्त्रेर्ममम्नित्यम् (तेन निर्वृत्ते)** (*ktrer mam nityam* [*tena* 2, *nirvṛtte* 19])

he lets *map* obligatorily (*nityam*) follow a pada in which a third-triplet ending follows a base in *-ktri*.

360 Certain taddhita affixes are introduced, by sūtras of the section that begins with A 5.4.68 (111), as parts of compounds,

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in order to account for alternants which occur as final constituents of compounds. For example, beside *rājan* 'king' (*rājā, rājānau, rājānaḥ,* etc.), one has *-rāja,* as in *aṅgarāja* 'king of the Aṅgas' (*aṅgarājaḥ* = *aṅgānāṁ rājā*). A compound like *aṅgarāja* is derived (A 2.2.8 [301]) from padas in an abstract string such as *aṅga-ām rājan-s,* whence is derived the string *aṅgānāṁ rājā,* with which *aṅgarājaḥ* alternates, so that it is not possible simply to operate with an alternant base *rāja.* What Pāṇini does, therefore, is to introduce certain affixes after constituents that enter into composition, thus making the affixes final parts of the compounds. A sample of sūtras introducing samāsānta suffixes will serve to illustrate the procedure.

361 The suffix *a* follows *ṛc* 'verse', *pur* 'city', *ap* 'water', *dhur, pathin* 'path', although the affix occurs with *dhur* only if this is used figuratively, of a load, not when it is used of something connected with an axle (*anakṣe*); and *ac* is introduced after *varcas* 'splendor' preceded by *brahman* 'Brahman' or *hastin* 'elephant':

A 5.4.74: **ऋक्पूरब्धूःपथामानक्षे।**
(*ṛkpūrabdhūḥpathām ānakṣe*)

A 5.4.78: **ब्रह्महस्तिभ्यां वर्चसः (अच्)**
(*brahmahastibhyāṁ varcasaḥ* [*ac* 75])

For example: *ardharca* 'half an ṛc' (A 2.2.2 [309]), *bahvṛca* 'which contains many ṛc (the Ṛgveda)' (A 2.2.24 [317]), *viṣṇupura* 'city of Viṣṇu', *vimalāpa* 'which has clean, spotless water', *rājadhurā* 'king's burden' (but *akṣadhur* 'axle pole'), *jalapatha* 'water way', *brahmavarcasa* 'Brahman-splendor'.

362 The samāsānta *ṭac* follows *rājan* 'king', *ahan* 'day', *sakhi* 'friend', and *go* 'cow, ox', provided this last does not occur in a compound involving deletion of a taddhita, of the type *dvigu* 'bought for two cows':

A 5.4.91: **राजाहस्सखिभ्यष्टच्।** (*rājāhassakhibhyaṣ ṭac*)

A 5.4.92: **गोरतद्धितलुकि।** (*gor ataddhitaluki*)

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For example: *aṅgarāja* 'king of the Aṅgas' (*-rāja* < *-rājan-a*: A 6.4.144 [504]), *dvyaha* 'two days' (A 2.1.51 [313]), *rājasakha* 'friend of the king', *pañcagava* 'five cows forming a group' (A 2.1.51).

363 The compounds considered in 362 are tatpuruṣas. *ṭac* is also introduced after constituents of dvandva compounds (*dvandvāt*: A 2.2.29 [318]), if these end in palatal stops (*cu*), *d, ṣ,* or *h* (*cudaṣahāntāt*), provided the compound denotes a conglomerate (*samāhāre*):

A 5.4.106: **द्वन्द्वाच्चुदषहान्तात्समाहारे (टच्)** (*dvandvāc cudaṣahāntāt samāhāre* [*ṭac* 91])

For example: *vāktvaca* 'voice (*vāc*) and skin (*tvac*)', *sampadvipada* 'good fortune (*sampad*) and bad fortune (*vipad*)', *grīṣmaprāvṛṣa* 'the hot season (*grīṣma*) and the rainy season (*prāvṛṣ*)', *chatropānaha* 'umbrella (*chatra*) and sandals (*upānah*)'.

Further, in an avyayībhāva (see 304-307]) *ṭac* occurs after constitutents of the group starting with *śarad* 'autumn' (*śaratprabhṛtibhyaḥ*) as well as items that end in *-an* (*anaḥ*), but only optionally (*anyatarasyām*) if the item in *-an* is neuter (*napuṁsakāt*):

A 5.4.107: **अव्ययीभावे शरत्प्रभृतिभ्यः।** (*avyayībhāve śaratprabhṛtibhyaḥ*)

A 5.4.108: **अनश्च।** (*anaś ca*)

A 5.4.109: **नपुंसकादन्यतरस्याम्।** (*napuṁsakād anyatarasyām*)

For example: *upaśarada* 'close to autumn', *adhyātma* 'with respect to the self (*ātman*)', *upacarma / upacarman* 'near the hide (*carman*)'.

364 In a bahuvrīhi compound (see 317), *sakthi* and *akṣi* (*sakthyakṣṇoḥ*) used in a constituent denoting a body part (*svāṅgāt*) take the suffix *ṣac*, as in *dīrghasaktha* 'one who has long thighs':

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A 5.4.113: **बहुव्रीहौ सक्थ्यक्ष्णोः स्वाङ्गात् षच्।**
(*bahuvrīhau sakthyakṣṇoḥ svāṅgāt ṣac*)

In *dīrghasakthi* used of a cart (*śakaṭa*) which has a long sakthi (a wooden part that comes between the axle and the body), *sakthi* does not refer to a body part: here *-sakthi* occurs, not *-saktha* (< *-sakthi-a*: A 6.4.148 [504]).

Another samāsānta element found in bahuvrīhi compounds is *kap*. According to

A 5.4.151: **उरःप्रभृतिभ्यः कप्।** (*uraḥprabhṛtibhyaḥ kap*)

A 5.4.152: **इनः स्त्रियाम्।** (*inaḥ striyām*)

A 5.4.153: **नद्यृतश्च।** (*nadyṛtaś ca*)

this suffix ocurs after: members of the group that begins with *uras* 'chest' (*uraḥprabhṛtibhyaḥ*), items with *-in* (*inaḥ*), provided the compound is used in the feminine (*striyām*), as well as items of the nadī class (see 56) and those that end in *-ṛ* (*nadyṛtaḥ*). For example: *vyūḍhoraska* 'broad-chested', *bahusvāmikā* (as in *bahusvāmikā nagarī* 'a town in which there are many masters'), *bahukumārīka* '... in which there are many girls', *bahukartṛka* '... which has many doers'.

There is a remainder (*śeṣa*) with respect to bahuvrīhi compounds covered by such rules. The samāsānta affix *kap* optionally (*vibhāṣā*) occurs in a bahuvrīhi of this residual group (*śeṣāt*):

A 5.4.154: **शेषाद्विभाषा।** (*śeṣād vibhāṣā*)

For example: *bahumāla* (< *bahumālā*: A 1.2.48 [322]), *bahumālāka* 'one who has many garlands'. In particular instances, however, *kap* which would be introduced according to such rules has to be disallowed. For example, by

A 5.4.155: **न संज्ञायाम्।** (*na saṁjñāyām*)

kap does not (*na*) occur if the bahuvrīhi in question is used to name a particular individual (*saṁjñāyām*); e.g., *viśvadeva*.

365 Samāsānta affixes in general are not allowed to occur under particular conditions. It will suffice to consider two

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relevant sūtras:

A 5.4.69: **न पूजनात्** (*na pūjanāt*)

A 5.4.71: **नञस्तत्पुरुषात्** (*nañas tatpuruṣāt*)

If the first constituent of a compound is used to praise (*pūjanāt*), the item that follows does not take a samāsānta, which is also disallowed with a tatpuruṣa compound whose first constituent is *nañ*. For example: *surājan* (nom. sg. *surājā*) 'good king' (A 2.2.18 [315]), *arājan* 'non-king' (A 2.2.6 [311]), with *-rājan* instead of *-rāja*, consequent on introducing *ṭac* (see 362).

Remarks.

366 1. From the very wording of sūtras such as A 5.3.7 (349) it is clear that suffixes such as *tasil* are introduced after padas, just as are affixes introduced to padas that are values of P_1 referred to in other rules (331-348). Moreover, A 6.3.17 (368) shows that *tarap* and *tamap* are introduced after padas, not to nominal bases. On the other hand, it is best to consider that in Pāṇini's system the feminine suffix *ti* of *yuvati* is introduced after the base *yuvan* (A 4.1.77 [358]).

367 2. Although the wording of A 5.4.68 (111) immediately accords with interpreting this sūtra as stating that taddhita affixes provided for by subsequent rules are introduced as final parts of compounds, there are details of derivational procedure which, according to Pāṇinīyas, require that samāsānta affixes (360-365) be introduced after padas of abstract strings which are then combined with related padas to form compounds. Thus, for example, *ṭac* is added to a pada such as *rājan-s* of a string like *aṅga-ām rājan-s*. These affixes are then called *samāsānta* because they will end up being final segments of compounds. My presentation is to be understood as based on the assumption that these affixes are indeed introduced as final parts of compounds, but at a derivational stage of the type *aṅga-ām-rājan-s*, where padas

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have been combined, but other operations have not yet applied. Full details concerning the problems at issue are dealt with in part V.2.3. Note also that the section headed by A 5.4.68 includes rules that provide for replacements instead of affixes.

2.4.2.4.3. Retention of endings in taddhita derivatives.

368 Although nominal endings included in constituents of derivates formed with taddhita affixes are generally deleted, they are retained in particular instances, just as some compounds retain endings (see 323). For example, one has not only *pūrvāhṇatana* 'matitudinal' but also *pūrvāhṇetana,* with the ending of *pūrvāhṇe* 'in the morning' retained. Accordingly,

A 6.3.17: **घकालतनेषु कालनाम्नः (विभाषा सप्तम्याः अलुक्)** (*ghakālataneṣu kālanāmnaḥ* [*vibhāṣā* 13, *saptamyāḥ* 9, *aluk* 1)

provides that a seventh-triplet ending is optionally not dropped if it occurs with a time word (*kālanāmnaḥ*) and is followed by a gha affix (A 1.1.22 [73]), *kāla* 'time' or the suffix *tana.*

2.4.2.4.4. Gender marking.

369 According to A 5.3.10 (349), any pada with a seventh-triplet ending and the appropriate pronominal base is optionally followed by *tral.* Thus, *tatra* is equivalent to a singular, dual, or plural locative form of any gender; e.g., *tatra deśe* (= *tasmin deśe*) 'in that country', *tatra nagare* (= *tasmin nagare*) 'in that city', *tatra nadyām* (= *tasyāṁ nadyām*) 'in that river', *tatra deśeṣu* (= *teṣu deśeṣu* [loc. pl. masc.]), *tatra nagareṣu* (= *teṣu nagareṣu* [nt.]), *tatra nadīṣu* (= *tāsu nadīṣu* [fem.]). Pronominal forms of the same number but different genders, such as *tasmin* and *tasyām,* derive from the

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same abstract complexes, in this case *tad-i,* with the seventh-triplet ending *ṅi*: *tad-i* > *taa-i* (A 7.2.102 [476]) > *ta-i* (A 6.1.97 [531]) > *tasmin* (A 7.1.15 [492]), *tad-i*> *taa-i* > *ta-i* > *taā-i* (A 4.1.4 [271]) > *tā-i* (A 6.1.101 [532]) > *tā-ām* (A 7.3.116 [497]) > *ta-syāām* (A 7.3.114 [499]) > *tasyām* (A 6.1.101). In Pāṇini's derivational system, a vibhakti (A 1.4.104 [67]) such as *ṅi* conditions the substitution of *-a* for the *-d* of *tad,* and an affix like *tra* is assigned to the vibhakti class (A 5.3.1 [71]) to let it condition this replacement. Now, if *tad* is used in the feminine, once its final consonant has been replaced by *a* and the two vowels of *taa-* have both been replaced by a single *a,* one has a base in *-a,* subject to taking the feminine affix *ṭāp.* This should indeed be allowed in deriving *tasyām* but not for deriving *tatra.* To avoid having *ṭāp* in such instances, Pāṇini provides that bases of the type subject to A 6.3.34 (327) are treated as though masculine also before a group of taddhita affixes, starting with *tasil* (*tasilādiṣu*: A 5.3.7), through *kṛtvasuc* (*ā kṛtvasucaḥ*: A 5.4.17 [347]):

A 6.3.35: तसिलादिष्वाकृत्वसुचः। (*tasilādiṣv ā kṛtvasucaḥ*)

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2.5. Syntactic doubling.

370 Sūtras of the section headed by A 8.1.1 (25) provide for doubling whole syntactic items under stated conditions. Such doubling may apply to padas in general or to particular padas. Thus, no padas are specified in

A 8.1.4: **नित्यवीप्सयोः।** (*nityavīpsayoḥ*)

which provides that an item is doubled when repetition of an action and pervasion of a thing by a property or an action are to be conveyed (*nityavīpsayoḥ*), as in

(101) a. **सा पचति पचति।** (*sā pacati pacati*) 'That (woman) is constantly cooking.'

b. **स जल्पति जल्पति।** (*sa jalpati jalpati*) 'That (man) is constantly muttering.'

(102) a. **ग्रामो ग्रामो रमणीयः।** (*grāmo grāmo ramaṇīyaḥ*) 'Every single village is pleasant.'

b. **पुरुषः पुरुषो निधनं गच्छति।** (*puruṣaḥ puruṣo nidhanam upaiti*) ' All men die.' (lit. 'Every man goes unto death.')

According to

A 8.1.5: **परेर्वर्जने।** (*parer varjane*)

on the other hand, *pari* is iterated when exclusion (*varjane*) is to be conveyed, as in

(103) **परि परि त्रिगर्तेभ्यो वृष्टो देवः।** (*pari pari trigartebhyo vṛṣṭo devaḥ*) 'It rained all around Trigarta (but not in it).'

Similarly, the sūtra

A 8.1.7: **उपर्यध्यधसः सामीप्ये।** (*uparyadhyadhasaḥ sāmīpye*)

provides for repeating *upari* 'above', *adhi* 'on, beneath', *adhas* 'below' when one wishes to convey proximity (*sāmīpye*) is conveyed, as in *upary upari* 'just above'.

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A 8.1.8: **वाक्यादेरामन्त्रितस्यासूयासम्मतिकोपकुत्सन-भर्त्सनेषु।** (*vākyāderāmantritasyāsūyāsammati-kopakutsanabhartsaneṣu*) provides that an utterance-initial (*vākyādeḥ*) vocative form (*āmantritasya*: A 2.3.48 [68]) is doubled when the following are to be conveyed: jealousy (*asūyā*), honoring (*sammati*), anger (*kopa*), scorn (*kutsana*), threatening (*bhartsana*). For example:

(104) **सुन्दर सुन्दर वृथा ते सौन्दर्यम्।** (*sundara sundara vṛthā te saundaryam*) 'Handsome, your beauty is in vain.'

(105) **देव देव वन्द्योऽसि।** (*deva deva vandyo'si*) 'Lord, you are venerable.'

(106) **दुर्विनीत दुर्विनीत इदानीं ज्ञास्यसि।** (*durvinīta durvinīta idānīṁ jñāsyasi*) 'Ill-mannered wretch, you'll soon learn.'

(107) **धानुष्क धानुष्क वृथा ते धनुः।** (*dhānuṣka dhānuṣka vṛthā te dhanuḥ*) 'Archer, your bow is useless.'

(108) **चौर चौर घातयिष्यामि त्वाम्।** (*caura caura ghātayiṣyāmi tvām*) 'Thief, I'll have you killed.'

The examples of repeated padas considered so far involve semantic conditions. This is not always required for a pada to be doubled, however. Thus,

A 8.1.6: **प्रसमुपोदः पादपूरणे।** (*prasamupodaḥ pādapūraṇe*) provide that *pra, sam, upa,* and *ud* are repeated *metri causa,* if this is necessary for filling out a verse section (*pādapūraṇe*). That is, according to an interpretation which Pāṇini accepts, the preverbs given in A 8.1.6 are repeated merely because of metrical requirements in Vedic passages such as the following:

(109) **प्रप्रायमग्निर्भरतस्य शृण्वे** (*prá prāyam agnir bharatásya śṛṇve* [RV 7.8.4a]) 'This fire (Agni) of Bharata enjoys widespread fame.'

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(110) संसमिद्युवसे वृषन्नग्ने विश्वान्यर्य आ (*sáṁ sam íd yuvase vṛṣannágne víśvāny aryá ā́*) [RV 10.191.1ab]) 'Agni, you bull, you bring together here everything that is the Ari's.'

371 Consider *ekaikam* and *ekaikayā* of

(111) एकैकमक्षरम् पठति। (*ekaikam akṣaram paṭhati*) 'He recites each and every syllable.'

(112) एकैकयाहुत्या जुहोति। (*ekaikayāhutyā juhoti*) 'He performs each and every oblation (*āhutyā* [instr. sg.]).'

These are used under the same meaning condition as are used *grāmo grāmo* and *puruṣaḥ puruṣo* of (102) (370), but instead of *ekam ekam, ekayaikayā,* one has *ekaikam* and *ekaikayā.* Accordingly,

A 8.1.9: एकम्बहुव्रीहिवत् (*ekam bahuvrīhivat*)

not only lets padas containing *eka* be doubled but also provides that the resulting sequence is treated like a bahuvrīhi (*bahuvrīhivat*). That is, nominal endings are deleted (A 2.4.71 [278]), and a feminine first constituent is given a masculine form (A 6.3.34 [327]). By virtue of being treated like a bahuvrīhi, items such as *ekaika* (< *eka-am eka-am* etc.) are nominal bases (*prātipadika*: A 1.2.46 [48]), followed by nominal endings (A 4.1.1 [105]). Although A 8.1.9 extends to doubled sequences with forms of *eka* operations that apply with respect to bahuvrīhi compounds, such sequences are nevertheless not true bahuvrīhis, so that *-eka* of *ekaika* is still a member of the sarvanāman class (A 1.1.27, 29 [53]); for example, the dative singular forms are *ekaikasmai* (masc.-nt.) and *ekaikasyai,* not * *ekaikāya* and * *ekaikāyai.* By

A 8.1.10: आबाधे च। (*ābādhe ca*)

an item is iterated and treated like a bahuvrīhi also (*ca*) when torment is to be conveyed (*ābādhe*). For example, one who is tormented by the absence of his beloved could say *gatagatā*

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'She is gone!'

372 Particular sequences that result from doubling, on the other hand, are subject to operations that apply to karmadhāraya compounds: nominal endings are dropped, constituents are treated as masculine (A 6.3.42 [327]), and the final vowel of the sequence is high-pitched (A 6.1.223 [602]), contrary to A 8.1.3 (619). Sūtras providing for doubling with these properties follow

A 8.1.11: **कर्मधारयवदुत्तरेषु।** (*karmadhārayavad uttareṣu*) according to which sequences resulting from doubling as provided for in subsequent rules (*uttareṣu*) are treated like karmadhārayas (*karmadhārayavat*). For example, by

A 8.1.12: **प्रकारे गुणवचनस्य।** (*prakāre guṇavacanasya*) a guṇavacana element (see 273-275) is iterated if one wishes to convey that something possessing the property in question has it only to a certain extent (*prakāre*); e.g., *paṭupaṭuḥ* (fem. *paṭupaṭvī*) 'kind of sharp'.

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2.6. Ekaśeṣa (single remainder).

373 One can combine padas such as *plakṣa-s, nyagrodha-s,* and *khadira-s* to form dvandva compounds (A 2.2.29 [318]), as in *plakṣanyagrodhau* (nom. du.) 'plakṣa and nyagrodha trees', *plakṣanyagrodhakhadirāḥ* (nom. pl.) 'plakṣa, nyagrodha, and khadira trees'. On the other hand, one cannot correctly say **vṛkṣavṛkṣau* or **vṛkṣavṛkṣavṛkṣāḥ,* although theoretically A 2.2.29 could allow these. Instead, one says *vṛkṣau, vṛkṣāḥ,* with one instance of the base *vṛkṣa* in each form. To provide for this and comparable usages, Pāṇini states rules providing for the occurrence of a single one of a possible series of items (*ekaśeṣa* 'remainder of one').

374 According to

A 1.2.64: **सरूपाणामेकशेष एकविभक्तौ।** (*sarūpāṇām ekaśeṣa ekavibhaktau*)

only one of a possible series of items having the same form (*sarūpāṇām*) occurs, as a single remainder (*ekaśeṣaḥ*), if a single ending is used (*ekavibhaktau*: A 1.4.104 [65, 67]). For example, one instance of the stem *vṛkṣa* occurs in *vṛkṣau* or *vṛkṣāḥ.* In addition,

A 1.2.65: **वृद्धो यूना तल्लक्षणश्चेदेव विशेषः।** (*vṛddho yūnā tallakṣaṇaś ced eva viśeṣaḥ*)

provides that if a derivate denoting an elder representative of a lineage (*vṛddhaḥ*), that is, a gotra descendant (cf. 78), is conjoined with one denoting a younger descendant (*yūnā*), the former alone remains, on condition (*ced* 'if') that the only difference (*viśeṣaḥ*) in meaning between the two items is only (*eva*) this (*tallakṣaṇaḥ*), namely, that the two denote descendants of the same ancestor, distinguished only by age. For example, corresponding to *gārgyaś ca gārgyāyaṇaś ca,* one has *gārgyau.* Moreover, if the gotra nominal denotes a female, it is treated as masculine (*pumvat*), that is, has the masculine form:

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A 1.2.66: **स्त्री पुंवच्च।** (*strī pumvac ca*)

Thus, corresponding to *gārgī gārgyāyaṇaś ca,* one has *gārgyau.*

Further, if two items have the same base meaning, differing only in that one denotes a male (*pumān*), the other a female (*striyā* [instr. sg.]), the former is used as a sole remainder:

A 1.2.67: **पुमान्स्त्रिया।** (*pumān striyā*)

For example, *brāhmaṇau* 'two Brāhmaṇas' can correspond 'to *brāhmaṇaś ca brāhmaṇī ca,* in which one of the items, namely *brāhmaṇī,* signifies a female.

375 The examples considered' in 374 concern items that not only have the same base meanings --- 'descendant of ...', 'Brāhmaṇa' --- but also share a nominal base. Provision has to be made also for items that are lexically distinct but denote male and female of the same type, sibling or child. By

A 1.2.68: **भ्रातृपुत्रौ स्वसृदुहितृभ्याम्।** (*bhrātṛputrau svasṛduhitṛbhyām*)

bhrāṭṛ 'brother' and *putra* 'son', respectively, are the single remainders of conjunction with *svasṛ* sister' and *duhitṛ* 'daughter': *bhrātarau* 'brother and sister (fratres)' = *bhrātā ca svasā ca, putrau* 'son and daughter (filii)' = *putraś ca duhitā ca.*

In certain comparable instances, dvandva compounds alternate with single terms, so that ekaśeṣa is provided for only optionally. Thus,

A 1.2.70: **पितामात्रा(अन्यतरस्याम्)** (*pitā mātrā* [*anyatarasyām* 69])

A 1.2.71: **श्वशुरः श्वश्रूवा।** (*śvaśuraḥ śvaśrvā*)

let *pitṛ* 'father' and *śvaśura* 'father-in-law' optionally (*anyatarasyām*) be single remainders of conjunction with *mātṛ* 'mother' and *śvaśrū* 'mother-in-law': *pitarau / mātā-pitarau* 'mother and father, parents', *śvaśurau / śvaśrū-śvaśurau* 'mother-in-law and father-in-law, in-laws (soceri)'.

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376 A neuter (*napuṁsakam*) is made the single remainder if it is conjoined with a non-neuter (*anapuṁsakena*) of the same base meaning; in addition, the single remainder is optionally (*anyatarasyām*) treated as singular (*ekavat*):

A 1.2.69: **नपुंसकमनपुंसकेनैकवच्चास्यान्यतरस्याम्।**
(*napuṁsakam anapuṁsakenaikavac cāsyānyatarasyām*)

E.g., *śuklāni, śuklam* 'white' = *śuklaś ca śuklā ca śuklaṁ ca.*

On the other hand, if reference is made to a troop of domestic animals (*grāmyapaśusaṅgheṣu* [loc. pl.]) other than young ones (*ataruṇeṣu*), the item denoting females is the single remainder, contrary to A 1.2.67 (374):

A 1.2.73: **ग्राम्यपशुसङ्घेष्वतरुणेषु स्त्री।**
(*grāmyapaśusaṅgheṣv ataruṇeṣu strī*)

For example: *ajāḥ* 'goats (acc. pl.)'.

377 If a pronoun of the group beginning with *tyad* (*tyadādīni*: 205) is conjoined with any other nominal (*sarvaiḥ* 'all'), it is necessarily (*nityam*) the sole remainder:

A 1.2.72: **त्यदादीनि सर्वैर्नित्यम्।** (*tyadādīni sarvair nityam*)

For example, *tau* 'those two' is used with reference to two persons, the pronominal *tad* serving as single remainder for *tad* and another nominal, such as *devadatta,* as in *sa ca devadattaś ca* 'that one and Devadatta'.

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2.7. Rules of replacement, partial doubling, and augmenting.

2.7.0. Introduction.

378 Replacements are of two major kinds: unconditioned (*anaimittikà*) and conditioned (*naimittika*). The latter is the norm. The only substitution rules that involve no conditioning factors whatever have to do with metalinguistic conventions: Markers are unconditionally deleted (A 1.3.9 [81]); initial *ṣ* and *ṇ* of verbs are replaced by *s* and *n* (A 6.1.64-65 [135]). Conditioned substitution may apply to sounds or grammatical elements in right or left contexts (A 1.1.66-67 [90]), which can be sounds or grammatical units. Augments are also added to elements in particular contexts (see 17-18).

2.7.1. Grammatical elements.

2.7.1.1. Verb suppletion.

379 Sanskrit is similar to other ancient Indo-European languages in that certain verbs do not occur in all contexts and different bases are used suppletively in particular forms. For example, the verb *as* 'be' is used in present and imperfect indicative forms (*asti āsīt* [3sg.]) as well as in the optative (3sg. *syāt*) and the Vedic subjunctive (*asat*), but *bhū* is used elsewhere, as in *abhūt* (3sg. aor.), *babhūva* (3sg. pfct.), *bhaviṣyati* (3sg. fut.), *bhūyāt* (3sg. prec.), *bhūta* (past ptcple., nom. sg. m. *bhūtaḥ*), *bhavitum* (inf.). In a series of sūtras headed by

A 2.4.35: आर्धधातुके (*ārdhadhātuke*)

Pāṇini provides for such suppletion by letting specified verbs occur in place of others when an ārdhadhātuka affix (A 3.4.114-117 [63]) is used.

380 The domain in which some verbs occur for others is any

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ārdhadhātuka affix. Thus,

A 2.4.52: **अस्तेर्भूः।** (*aster bhūḥ*)

simply provides that *bhū* occurs instead of *as* (see 379). Similarly, as provided for in

A 2.4.53: **ब्रुवो वचिः।** (*bruvo vaciḥ*)

vac (*vaciḥ*) is used instead of *brū* (*bruvaḥ*) 'say, speak' with any ārdhadhātuka: *bravīti, abravīt, brūyāt,* but *avocat, uvāca, vakṣyati, ucyāt, ukta, vaktum.*

In other instances, the domains for suppletion are more restricted. For example, by

A 2.4.36: **अदो जग्धिर्ल्यप्ति किति।** (*ado jagdhir lyapti kiti*)

A 2.4.37: **लुङ्सनोर्घस्लृ।** (*luṅsanor ghasḷ*)

jagdh (*jagdhiḥ*) occurs for *ad* (*adaḥ*) 'eat' with *lyap* (A 7.1.37 [491]) or an affix that is marked with *k* (*kiti*) and begins with *t* (*ti*), but the suppletive base for *ad* with *luṅ* [A 3.2.110 [233]) and *san* [A 3.1.7 [279]) is *ghasḷ*: *atti, ādat, adyāt, vijagdhya* 'having eaten up', *jagdha* (suffix *kta*: A 3.2.102 [294]), *aghasat* (3sg. aor.: A 3.1.55 [236]), *jighatsa* (*jighatsati*) 'wish to eat'. *ghasḷ* also occurs for *ad* with the suffixes *ghañ* and *ap* (A 3. 3.18, 59 [111, 291]) as well as, optionally (*anyatarasyām*), with *liṭ* (A 3.2.115 [233]):

A 2.4.38: **घञपोश्च।** (*ghañapoś ca*)

A 2.4.40: **लिट्यन्यतरस्याम्।** (*liṭy anyatarasyām*)

E.g., *ghāsa* 'eating', *praghasa* 'voracious eating', *jaghāsa / āda* (3sg. pfct.).

As provided for in

A 2.4.42: **हनो वध लिङि।** (*hano vadha liṅi*)

A 2.4.43: **लुङि च।** (*luṅi ca*)

A 2.4.44: **आत्मनेपदेष्वन्यतरस्याम्।** (*ātmanepadeṣv anyatarasyām*)

vadha occurs for *han* 'strike, kill' with *liṅ* (A 3.3.173) or *luṅ,*

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optionally with ātmanepada endings replacing the latter: *vadhyāt* (3sg. prec.), *avadhīt* (3sg. aor. act.), *āvadhiṣṭa* / *āhata* (3sg. aor. mid. with preverb *ā*).

The following sūtras deal with suppletion in connection with the verbs *iṇ* 'go' and *iṅ* 'study, learn' (*adhi-i*):

A 2.4.45: **इणो गा लुङि।** (*iṇo gā luṅi*)

A 2.4.46: **णौ गमिरबोधने।** (*ṇau gamir abodhane*)

A 2.4.47: **सनि च।** (*sani ca*)

A 2.4.48: **इङश्च।** (*iṅaś ca*)

A 2.4.49: **गाङ् लिटि।** (*gāṅ liṭi*)

A 2.4.50: **विभाषा लुङ्लृङोः।** (*vibhāṣā luṅlṛṅoḥ*)

A 2.4.51: **णौ च संश्चङोः।** (*ṇau ca saṁścaṅoḥ*)

Instead of *iṇ*, *gā* occurs with *luṅ*, and *gam* is used with *ṇi* (A 3.1.26 [281]) except in the sense of perceiving (*abodhane*): *agāt* (3sg. aor.), *gam-i* (*gamayati*) 'cause to go'; but the causative connected with *prati-i* (*praty eti*) 'understand' is *prati-i-i* (*pratyāyayati*). *gam* is also suppletive with the desiderative suffix *san*, not only for *iṇ*, with the restriction given in A 2.4.46, but also for *iṅ*: *jigamiṣa* (*jigamiṣati*) 'wish to go', *prati-iṣiṣa* (*pratīṣiṣati*) 'wish to understand', *adhi-jigāṁsa* (*adhi jigāṁsate*) 'wish to learn'. On the other hand, *gāṅ* substitutes for *iṅ* with *liṭ*, *luṅ* and *lṛṅ* (A 3.3.139-140 [258]), optionally where the last two are concerned, and this is the case also with the derivate in *-ṇi* to this verb, when the causative takes the suffix *san* or *caṅ* (A 3.1.48 [286]): *adhi jage* (3sg. pfct.), *adhy agīṣṭa* / *adhy aiṣṭa* (3sg. aor.), *adhy agīṣyata* / *adhy aiṣyata* (3sg. cond.), *adhi-jigāpayiṣa* / *adhy-āpipayiṣa* (*adhi jigāpayiṣati* / *adhy āpipayiṣati*), *adhy ajīgapat* / *adhy āpipat* (3sg. aor. caus.).

381 According to A 1.1.56 (100), *gā* which replaces *iṅ* by A 2.4.48 (380) is treated as marked with *ṅ*, so that, in accordance with A 1.3.62 (140), *adhi jigāṁsa* takes ātmane-

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pada affixes. Similarly, *iṅ* and *gāṅ*--- which is marked with *ṅ* to distinguish it from *gā* related to *iṇ* (A 1.2.1 [513]) --- agree in taking ātmanepada affixes in agentive forms. Not all verbs in suppletive relation, however, agree with respect to diathesis. Thus, *cakṣiṅ* 'say, call, explain' is an ātmanepadin verb (*ā caṣṭe*), but *khyā*, which is in suppletive relation to this verb, is ubhayapadin: *ā khyāsyati, ākhyāsyate*. Hence, Pāṇini marks *khyā* with *ñ*, to show that, contrary to what would obtain by virtue of this verb's replacing *cakṣiṅ*, it takes both ātmanepada and parasmaipada affixes (A 1.3.72, 78 [139, 142]). By

A 2.4.54: **चक्षिङः ख्याञ्।** (*cakṣiṅaḥ khyāñ*)

khyāñ occurs instead of *cakṣiṅ* with an ārdhadhātuka affix.

2.7.1.2. Partial doubling, operations on abhyāsa syllables.

382 Sūtras of the section beginning with A 6.1.1 (24) provide for doubling parts of verbs. Before an ending that derives from *liṭ* (*liṭi*: A 3.2.115 [233]), a syllable of a verb (*dhātoḥ*) is doubled, provided it is not an abhyāsa syllable (*anabhyāsasya*: A 6.1.4 [52]):

A 6.1.8: **लिटि धातोरनभ्यासस्य।** (*liṭi dhātor anabhyāsasya*)

The following rules also let segments be iterated:

A 6.1.9: **सन्यङोः।** (*sanyaṅoḥ*)

A 6.1.10: **श्लौ।** (*ślau*)

A 6.1.11: **चङि।** (*caṅi*)

Derived verbs with *san* and *yaṅ* (*sanyaṅoḥ*: A 3.1.7, 22-24 [279-280]) have their first or second syllables doubled. This applies also to a verb if the vikaraṇa *śap* following it is replaced by *ślu* (A 2.4.75 [158]) and before the suffix *caṅ* (A 3.1.48 [286]). For example, doubling applies to *pac-* of *pac-a*,

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in which the ending *ṇal* derives from *liṭ* (A 3.4.82 [397]), to *kir-* of *kir-sa* (< *kṝ-sa* < *kṛ-sa*: A 6.4.16, 7.1.100 [422-423]), to *yaj-* of *yaj-ya*, to *dā-* of *dā-ti* (< *dā-a-ti*), and to *kar-* of *kar-a-t* (< *kār-i-a-t* : A 6.4.51, 7.4.1 [450, 286]): *pac-pac-a*, *kir-kir-sa*, *yaj-yaj-ya*, *dā-dā-ti*, *kar-kar-a-t*.

383 The first syllable of sequences obtained by such doubling is called *abhyāsa* (A 6.1.4 [52]), and particular operations apply to abhyāsa syllables. A vowel (A 1.2.28 [96]) in such a syllable is replaced by a short vowel (*hrasvaḥ*):

A 7.4.59: ह्रस्वः (अभ्यासस्य) (*hrasvaḥ* [*abhyāsasya* 58])

E.g., *dā-dā-ti* > *da-dā-ti* 'gives'. In general, the first (*ādiḥ*) consonant (*hal*) of an abhyāsa syllable is alone allowed to stay as a remainder (*śeṣaḥ*); in syllables where voiceless stops (*khayaḥ*) are preceded by voiceless spirants (*śarpūrvāḥ*), however, these stops are the sole remaining consonants:

A 7.4.60: हलादिः शेषः। (*halādiḥ śeṣaḥ*)

A 7.4.61: शर्पूर्वाः खयः। (*śarvpūrvāḥ khayaḥ*)

E.g., *pac-pac-a* > *papaca* 'cooked (1sg. pfct.)', *sthā-sthā-au* >... *tasthau* 'stayed in place (3sg. pfct.)'. Moreover, velar stops and *h* (*kuhoḥ*) in abhyāsa syllables are regularly replaced by palatal stops (*cuḥ*):

A 7.4.62: कुहोश्चुः। (*kuhoś cuḥ*)

E.g., *kir-kir-sa* >... *cikīrṣa* 'wish to do, make', *kar-kar-a-t* >... *acīkarat* 'caused to do, to make (3sg. aor.)'.

384 Elements in abhyāsa syllables of particular shapes or belonging to specified stems are subject to special operations. Thus, *iy* and *uv* (*iyaṅuvaṅau*) respectively substitute for *i-* and *u*-vowels (*yvoḥ*) of abhyāsa syllables followed by vowels not homogeneous with them (*asavarṇe* [loc. sg.]):

A 6.4.78: अभ्यासस्यासवर्णे (अचि ष्ण्योरियङुवङौ)

(*abhyāsasyāsavarṇe* [*aci ṇyor iyaṅuvaṅau* 77])

According to

A 7.4.66: उरत् (*ur at*)

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A 7.4.67: द्युतिस्वाप्योः सम्प्रसारणम्। (*dyutisvāpyoḥ samprasāraṇam*)

a (*at*: A 1.1.70 [85]), automatically followed by *r* (A 1.1.51 [93]), substitutes for a *ṛ*- vowel in an abhyāsa syllable, and samprasāraṇa substitution (A 1.1.45 [38]) applies to abhyāsa syllables formed from the bases *dyut* 'flash, lighten' and *svāp-i* 'make to sleep' (*dyutisvāpyoḥ*); e.g., *va-vṛdh-* (< *var-vṛdh-* < ... *vṛdh-vṛdh-*), *di-dyut-* (< ... *dyut-dyut*) in *vavṛdhe* 'grew' (3sg. pfct.), *vi didyute* 'flashed, lightened' (3sg. pfct.).

385 Some operations apply to abhyāsa syllables of stems in particular grammatical contexts. For example,

A 7.4.69: दीर्घ इणः किति (लिटि) (*dīrgha iṇaḥ kiti* [*liṭi* 68])

provides that a long vowel (*dīrghaḥ*) substitutes for the *i* of an abhyāsa syllable formed from the base *iṇ* 'go' (*iṇaḥ*) followed by an ending that derives from *liṭ* (*liṭi*) and is marked with *k* (*kiti*); e.g., *i-y-atus* > *īyatus* (3du. pfct.). In forms with *liṭ* endings, long-vowel substitution also applies to initial *a* (*ata ādeḥ*), and the stem syllable that follows then takes the initial augment *nuṭ* (A 1.1.46 [17]) if the stem in question has two consonants (*dvihalaḥ*):

A 7.4.70: अत आदेः। (*ata ādeḥ*)

A 7.4.71: तस्मान्नुड् द्विहलः। (*tasmān nuḍ dvihalaḥ*)

E.g., *āṭa* (3sg. pfct. act.) 'wandered' < *ā-aṭ-a* < *aṭ-a*, *ānañja* 'smeared, anointed' < ... *ā-anj-a* < ... *anj-a*. Also in forms with *liṭ* endings, the vowel of an abhyāsa syllable from the base *bhū* 'be, become' (*bhavateḥ*) is replaced by *a*:

A 7.4.73: भवतेरः। (*bhavater aḥ*)

E.g., *babhūva* (3sg. pfct.).

The substitution of *ślu* for *śap* also entails special replacements for vowels of abhyāsa syllables.

A 7.4.75: निजां त्रयाणां गुणः श्लौ। (*nijāṁ trayāṇaṁ*

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guṇaḥ ślau)

A 7.4.76: **भृञामित्।** (*bhṛñām it*)

concern such syllables from two sets of three verbs each, within the third major group of verbs (172). The vowels of the abhyāsa syllables gotten from the three (*trayāṇām*) verbs starting with *ṇijir* 'wash' (*nijām*) are replaced by guṇa vowels (A 1.1.2 [9]), and *i* (*it*) substitutes for the vowels in abhyāsa syllables of the three bases starting with *ḍubhṛñ* 'maintain, nurture': *nenekti* (3sg. pres. act.), *vevekti* 'segregates' (*vijir*), *veveṣṭi* 'surrounds, encompasses' (*viṣḷ*); *bibharti*, *mimīte* 'measures' (*māñ*), *jihīte* 'runs, flees' (*ohāñ*).

In addition, *i* substitutes for certain vowels in abhyāsa syllables formed from stems before the suffix *san* (*sani*: A 3.1.7 [279]). By

A 7.4.79: **सन्यतः।** (*sany ataḥ*)

A 7.4.80: **ओः पुयण्ज्यपरे।** (*oḥ puyaṇjy apare*)

this replacement applies to *a* (*ataḥ*) in general and to *u*-vowels (*oḥ*) before labials, semivowels or *j* (*puyaṇji*) followed by *a*-vowels (*apare*); e.g., *pipakṣa* (*pipakṣati, pipakṣate*) 'wish to cook', *pipaviṣa* (*pipaviṣate*) 'wish to purify, filter' (< *pu-pav-isa*).

386 Abhyāsa syllables of stems with the suffix *yaṅ* undergo a series of particular operations. According to

A 7.4.82: **गुणो यङ्लुकोः।** (*guṇo yaṅlukoḥ*)

A 7.4.83: **दीर्घोऽकितः।** (*dīrgho'kitaḥ*)

guṇa substitition applies to final *i*-, *u*-, *ṛ*- and *ṝ*-vowels (A 1.1.3 [97]) not only if a stem is followed by *yaṅ* but also if this suffix has been deleted (*yaṅlukoḥ*), and any other vowel is replaced by a long one (*dīrghaḥ*) under the same conditions, provided the abhyāsa syllable in which it occurs is not marked with *k* (*akitaḥ*); e.g., *cecīya* (*cecīyate*) 'repeatedly pluck, gather, heap', *lolūya* (*lolūyate*) 'repeatedly cut', *pāpacya* (*pāpacyate*) 'repeatedly cook.' An abhyāsa syllable is said to be

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marked with *k* by virtue of receiving an augment with this marker. For example, if such a syllable ends with *a* (*ataḥ*) and derives from a stem with a final nasal (*anunāsikāntasya*), it gets the final augment *nuk*:

A 7.4.85: **नुग्तोऽनुनासिकान्तस्या।** (*nug ato 'nunāsikāntasya*)

E.g., *tantanya* (*tantanyate*) 'repeatedly stretch' (< *ta-tan-ya*).

387 Derivates such as *acīkarat* also involve special operations for vowels of abhyāsa syllables in particular contexts, as provided for in

A 7.4.93: **सन्वल्लघुनि चङ्परेऽनग्लोपे।** (*sanval laghuni caṅpare'naglope*)

A 7.4.94: **दीर्घो लघोः।** (*dīrgho laghoḥ*)

If the vowel in question occurs before a stem syllable with a light vowel (*laghuni*: A 1.4.10 [37]) and at a step in the derivation the stem occurs with *ṇi* followed by *caṅ* (*caṅpare*), provided a vowel *a ā i ī u ū ṛ ṝ ḷ* is not subject to deletion before *ṇi* (*anaglope*), then the vowel of the abhyāsa syllable is subject to operations as apply in the case of derivates with *san* (*sanvat*), and a light (*laghoḥ*) vowel of an abhyāsa syllable is replaced by a long vowel (*dīrghaḥ*: A 1.2.27 [35]). That is, short *a* and short or long *u*- vowels are replaced by *i* (A 7.4.79-80 [385]), and the resulting vowel is replaced by a long one if the following syllable does not begin with a cluster. For example, *kāri-a-t* > *kār-a-t* (A 6.4.51 [450]) > *kar-a-t* (A 7.4.1 [286]) > *kar-kar-a-t* (A 6.1.11 [382]) > *akar-kar-a-t* (A 6.4.71 [238]) > *aka-kar-a-t* (A 7.4.60 [383]) > *aca-kar-a-t* (A 7.4.62) > *aci-kar-a-t* > *acīkarat*, but *atatakṣat* 'caused to fashion', in which the *-a* of the abhyāsa syllable precedes a stem segment with a heavy vowel (*-takṣ-a-*).

2.7.1.3. Other operations on verbs and verbal affixes.

2.7.1.3.1. Rules outside the section headed by A 6.4.1.

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388 Samprasāraṇa substitution (A 1.1.45 [38]) applies to certain verbs in given contexts. Before an affix marked with *k* (*kiti*), *vac* 'speak, say', *svap* 'sleep, dream', and verbs of the subgroup beginning with *yaj* (160) (*vacisvapiyajajādīnām*) undergo this replacement, which applies also to *grah* 'seize, grasp, take', *jyā* 'become old, worn out', *vay* 'weave', *vyadh* 'pierce, strike', *vaś* 'desire', *vyac* 'deceive, cheat', *vraśc* 'cut, hew', *prach* 'ask', *bhrasj* 'fry' (*grahijyāvayivyadhivaṣṭivicati-vṛścatipṛcchatibhṛjjatīnām*), not only before affixes marked with *k* but also before those marked with *ṅ* (*ṅiti ca*):

A 6.1.15: **वचिस्वपियजादीनाङ्किति (सम्प्रसारणम्)**

(*vacisvapiyajādīnāṅ kiti* [*samprasāraṇam* 13])

A 6.1.16: **ग्रहिज्यावयिव्यधिवष्टिविचतिवृश्चतिपृच्छति-भृज्जतीनां ङिति च।** (*grahijyāvayivyadhivaṣṭi-vicativṛścatipṛcchatibhṛjjatīnāṅ ṅiti ca*)

For example: *vac-ta* (suffix *kta*: A 3.2.102 [294]) > *uac-ta* > *uc-ta* (A 6.1.108 [533]) > *ukta* (A 8.2.30 [544]) 'spoken, said', *svap-ta* > *suap-ta* > *supta* 'asleep', *yaj-ta* > *iaj-ta* > *ij-ta* > *iṣ-ta* (A 8.2.36 [544]) > *iṣṭa* (A 8.4.41 [574]) 'reverenced, offered, sacrificed', *vac-ya-te* (suffix *yak*: A 3.1.67 [156]) >... *ucyate* (3sg. pass. pres.), *svap-ya-te* > ... *supyate*, *yaj-ya-te* > ... *ijyate*, *grah-ya-te* > ... *gṛhyate*, *grah-nā-ti* (suffix *śnā*: A 3.1.81, 1.2.4 [157, 513]) > *gṛah-nā-ti* > *gṛh-nā-ti* > *gṛhṇāti* (A 8.4.2 [570]).

Samprasāraṇa substitution also applies to a semivowel of an abhyāsa syllable (*abhyāsasya*: A 6.1.4 [52]) gotten from verbs of both (*ubhayeṣām*) the groups referred to in A 6.1.15-16, when a *liṭ* ending follows (*liṭi*):

A 6.1.17: **लिटयभ्यासस्योभयेषाम्।** (*liṭy abhyāsasyobhayeṣām*)

For example: *vac-a* (1sg. pfct.) > *vac-vac-a* > *uc-vac-a* > *uvaca*, *vyadh-itha* (2sg. pfct.) > ... *vivyadhitha*.

389 In certain instances, samprasāraṇa substitution is optional. For example, the intensive of *śvi* 'swell', derived with

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the suffix *yaṅ* (A 3.1.22 [280]), is either *śośūya* (*śośūyate*) or *śeśvīya* (*śeśvīyate*), and in the perfect this verb has the forms *śuśāva* / *śiśvāya* (3sg.), *śuśuvatuḥ* / *śiśviyatuḥ* (3du.), etc. Now, the past participle of *śvi* is *śūna*, so that this verb is included in the group that begins with *yaj* (A 6.1.15 [388]): *śvi-ta* > *śui-ta* > *śu-ta* > *śū-ta* (A 6.4.2 [421]) > *śūna* (A 8.2.45 [549]). In addition, endings that derive from *liṭ* and are not marked with *p* are treated as marked with *k* when they follow a verb that does not end in a consonant cluster (A 1.2.5 [514]), so that a form such as *śuśuvatuḥ* is accounted for in terms of the operations provided for in A 6.1.15-16 (388). On the other hand, a form like *śuśuvatuḥ* alternates with *śiśviyatuḥ*, so that having samprasāraṇa substition take effect by A 6.1.15 is not sufficient. Moreover, this rule does not provide for the replacement before elements not marked with *k*, such as the *liṭ* ending *ṇal*, although here too samprasāraṇa replacement should apply optionally. Hence,

A 6.1.30: **विभाषा श्वेः (लिड्यङोः)** (*vibhāṣā śveḥ* [*liḍyaṅoḥ* 29])

provides that *ṭuośvi* 'swell' undergoes samprasāraṇa replacement optionally before *liṭ* endings and *yaṅ* (*liḍyaṅoḥ*): *śvi-ya* > *śui-ya* > *śu-ya* > *śū-ya* (A 6.4.2) > *śū-śū-ya* (A 6.1.9 [382]) > *śośūya* (A 7.4.82 [386]), *śvi-ya* > *śvī-ya* (A 7.4.25 [426]) > *śvī-śvī-ya* > *śī-śvī-ya* > *śeśvīya*, *śvi-a* > *śui-a* > *śu-a* > *śau-a* (A 7.2.115 [417]) > *śāv-a* (A 6.1.78 [524]) > *śau-śāv-a* > *śuśāva* (A 7.4.59, 1.1.48 [383, 94]), *śvi-a* > *śvai-a* > *śvāy-a* > *śvai-śvāy-a* > *śai-śvāy-a* > *śiśvāya*, *śvi-atus* > *śui-atus* > *śu-atus* > *śuv-atus* (A 6.4.77 [452]) > *śuśuvatus*, *śvi-atus* > *śviy-atus* > *śvi-śviy-atus* > *śiśviyatus*.

390 There are verbs whose structure is such that they could possibly, though undesiredly, undergo samaprasāraṇa substitution twice. Consider, for example, *vyadh* 'pierce'. The affixes *kta*, *yak* are directly marked with *k*, and *śyan* (A 3.1.69 [157]) has *ñi*- marking imposed on it (A 1.2.4 [513]), so that samprasāraṇa replacement applies to *vyadh* before these

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items, as provided for in A 6.1.16 (388): *vyadh-ta* > *viadh-ta* > *vidh-ta* > *vidh-dha* (A 8.2.40 [547]) > *viddha* (A 8.4.53 [577]), *vyadh-ya-te* > *viadh-ya-te* > *vidhyate*, *vyadh-ya-ti* > ... *vidhyati*. Since *vidh* contains *v-*, however, samprasāraṇa substitution could apply again, which would result in undesired forms: **uddha*, **udhyate*, **udhyati*. To preclude such double samprasāraṇa substitution, Pāṇini specifies that this does not apply (*na*) before a samprasāraṇa vowel (*samprasāraṇe*):

A 6.1.37: **न सम्प्रसारणे सम्प्रसारणम्** (*na samprasāraṇe samprasāraṇam*)

391 Samprasāraṇa replacement must also be precluded, in particular contexts, for certain verbs. For example, *veñ* 'weave' is part of the group that begins with *yaj*, subject, by A 6.1.15 (388), to samprasāraṇa substitution before affixes marked with *k*, as in *uta* 'woven'. However, as provided for in

A 6.1.40: **वेञः (लिटि न सम्प्रसारणम्)** (*veñaḥ* [*liṭi* 38, *na samprasāraṇam* 37]

A 6.1.41: **ल्यपि च।** (*lyapi ca*)

this does not (*na*) apply before an ending that derives from *liṭ* as well as before *lyap* (*lyapi*: A 7.1.37 [491]): *vā-atus* (A 6.1.45 [392]) > *v-aṭus* (A 6.4.64 [451]) > *vā-v-atus* (A1.1.59 [101]) > *vavatus* (A 7.4.59 [383]), *pravāya* (< *pravātvā*) 'after weaving'.

392 A series of sūtras provides for replacing verb-final vowels with *-ā*. According to

A 6.1.45: **आदेच उपदेशेऽशिति।** (*ād eca upadeśe'śiti*)

the final vowel of a verb that ends with *e o ai au* (*ecaḥ*) before it undergoes any operation other than the dropping of markers (*upadeśe*) is unconditionally replaced by *ā* (*āt*), but this does not apply if an affix marked with *ś* follows (*aśiti*). For example, *veñ* 'weave', *gai* 'sing' have *-ay*, *-āy* before *śap*, as in *vayati* (< *ve-a-ti*: A 6.1.78 [524]) 'weaves', *gāyati* (< *gai-a-ti*) 'sings', but *-ā* in derivates such as *vātum* (inf.), *gātum*.

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Other verbs undergo this substitution in more restricted environments. For example, *krī* 'buy', *iṅ* (*adhi-i* 'study, learn'), *ji* 'conquer, be victorious' have *-ā* before the causative suffix *ṇic* (A 3.1.26 [281]): *krāp-i* (< *krā-i*: A 7.3.36 [124]), *adhi āp-i, jāp-i mī* 'deceive, change, harm' (3sg. pres. *mināti*), *mi* 'set, build' (*minoti*), and *dī* 'perish' (*dīyate*) have *-ā* instead of *-e* in contexts which regularly condition the occurrence of guṇa vowels, as well as when these verbs are used with *lyap*: *pramātum, dātum, pramāya, upadāya*. The substitution of *-ā* for the final vowels of the verbs mentioned, under the conditions noted, is provided for in:

A 6.1.48: **क्रीङ्जीनां णौ।** (*krīṅjīnāṁ ṇau*)

A 6.1.50: **मीनातिमिनोतिदीङां ल्यपि च।**
(*mīnātiminotidīṅāṁ lyapi ca*)

In the same contexts, the *-ī* of *lī* 'cling, adhere to' is optionally replaced by *-ā*:

A 6.1.51: **विभाषा लीयतेः।** (*vibhāṣā līyateḥ*)

For example: *lātum / letum, vilāya / vilīya* 'after being absorbed into'.

393 The regular guṇa and vṛddhi replacements for *ṛ* are *a* and *ā*, automatically followed by *r* (A 1.1.51 [93]). Accordingly, one has derivates such as *darś-i* (*darśayati*) 'cause to see, show', *darśana* 'seeing, sight', *sarjana* 'loosing, creating', from *dṛś* 'see, look' and *sṛj* 'let loose, create'. On the other hand, the infinitives of these verbs are *draṣṭum, sraṣṭum*, not **darṣṭum*, **sarṣṭum*, and in the aorist one has *adrākṣīt, asrākṣīt*, and so on. Pāṇini therefore lets the augment *am* (A 1.1.47 [16-17]) follow the *ṛ* of *sṛj* and *dṛś* (*sṛjidṛśoḥ*) when these verbs occur before an affix that begins with a consonant other than a semivowel or a nasal (*jhali*), provided the affix in question is not marked with *k* (*akiti*):

A 6.1.58: **सृजिदृशोर्झल्यमकिति।** (*sṛjidṛśor jhaly amakiti*)

Moreover, in order to account for alternants such as *tarptum,*

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traptum 'please', Pāṇini provides, in

A 6.1.59: **अनुदात्तस्य चर्दुपधस्यान्यतरस्याम्।** (*anudāttasya cardupadhasyānyatarasyām*)

that *am* is also (*ca*) optionally (*anyatarasyām*) introduced, in the same contexts, to any verb that has penultimate *ṛ* (*ṛdupadhasya*) and is taught with a low-pitched base vowel (*anudāttasya*).

394 To account for derivates such as *prasutya* 'after pressing', *upacitya* 'after heaping, gathering up' --- where *lyap* replaces *ktvā* (A 7.1.37 [491]) in compounds with the verbs *su, ci* --- and *somasut* 'one who has pressed out Soma juice', *agnicit* 'one who has set up a sacrificial fire', formed by affixing *kvip* to *ci, su* (A 3.2.90-91 [295]), Pāṇini lets the final augment *tuk* (A 1.1.46 [17]) be introduced to a short vowel (*hrasvasya*) before a *kṛt* suffix (*kṛti*) that is marked with *p* (*piti*):

A 6.1.71: **ह्रस्वस्य पिति कृति तुक्।** (*hrasvasya piti kṛti tuk*)

395 Basic verb endings (A 3.4.78 [64, 232]) are subject to particular operations, depending on the L-affixes they replace. Parts of endings, as well as whole endings, are replaced, and augments are added to segments of endings.

396 The part of an ātmanepada ending (A 1.4.100 [64]) which begins with its last vowel (*ṭeḥ*: A 1.1.64 [41]) is replaced by *e* if the ending derives from an L-affix marked with *ṭ* (*ṭitaḥ* [*lasya*]):

A 3.4.79: **टित आत्मनेपदानां टेरे (लस्य)** (*ṭita ātmanepadānāṁ ṭer e* [*lasya* 77])

This is only the general rule, to which there are exceptions. The entire ending *thās* (*thāsaḥ*: A 1.1.55 [95]) is replaced by *se* if it derives from an L-affix marked with *ṭ*; *eś* (A 1.1.55) and *irec* respectively substitute for *ta, jha* that derive from *liṭ*:

A 3.4.80: **थासस्से।** (*thāsas se*)

A 3.4.81: **लिटस्तझयोरेशिरेच्।** (*liṭas tajhayor eś irec*)

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For example: *edhate* (< ... *edh-ta*) 'thrives', *edhase* (2sg. < ... *edh-thās*), *cakre* (< ... *kṛ-e* < *kṛ-ta*) 'did, made' (3sg. pfct. mid.), *cakrire* (3pl.).

397 The nine basic parasmaipada endings are respectively replaced by *ṇal atus us thal athus a ṇal va ma* if they derive from *liṭ*:

A 3.4.82: **परस्मैपदानां णलतुसुस्थलथुसणल्वमाः।** (*parasmaipadānāṁ ṇalatususthalathusaṇalvamāḥ*)

The same substitutions apply, but only optionally (*vā*) to parasmaipada endings which replace *laṭ* (*laṭaḥ*) after *vid* 'know' (*vidaḥ*):

A 3.4.83: **विदो लटो वा।** (*vido laṭo vā*)

E.g., *cakāra* (< ... *kṛ-a* < *kṛ-ti*), *cakratuḥ, cakruḥ* and *veda vidatuḥ, viduḥ* in addition to *vetti, vittaḥ, vidanti*. Moreover, as provided for in

A 3.4.84: **ब्रुवः पञ्चानामादित आहो ब्रुवः।** (*bruvaḥ pañcānām ādita āho bruvaḥ*)

the first five (*pañcānām āditaḥ*) parasmaipada endings are respectively replaced by *ṇal atus us thal athus* if they derive from *laṭ* introduced after *brū* 'say, speak' (*bruvaḥ*), and at the same time *āh* substitutes for *brū* (*āho bruvaḥ*): *āha, āhatuḥ, āhuḥ, āttha* (< ... *āh-tha*: A 8.2.35, 8.4.55 [544, 578]), *āhathuḥ* in addition to *bravīti, brūtaḥ, bruvanti, bravīṣi, brūthaḥ*, but only *brūtha, bravīmi, brūvaḥ, brūmaḥ*.

398 In general, basic endings that replace *loṭ* (*loṭaḥ*) are treated in the same way as endings which derive from *laṅ* (*laṅvat*):

A 3.4.85: **लोटो लङ्वत्।** (*loṭo laṅvat*)

For example *pacatām, pacatam, pacata, pacāva, pacāma* have the endings *tām* (3du.), *tam* (2du.), *ta* (2pl.), *va* (1du.), *ma* (1pl.) instead of *tas, thas, tha, mip, vas, mas* (A 3.4.99-101 [400]). However, the *-i* (*eḥ*) of basic endings gotten from *loṭ* is generally replaced by *u*:

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A 3.4.86: **एरुः।** (*er uḥ*)

E.g., *pacatu* (3sg.). On the other hand, if *sip* derives from *loṭ* it is replaced by *hi* which is not marked with *p* (*apit*), and *ni* replaces *mi* derived from *loṭ*:

A 3.4.87: **सेर्ह्यपिच्च।** (*ser hy apic ca*)

A 3.4.89: **मेर्निः।** (*mer niḥ*)

E.g., *lunīhi* (2sg.) 'cut!', *adāni* 'let me eat'. The last-cited form has not merely *ni* but augmented *āni*, and the augment *ā* occurs in first-person forms of the dual and plural also: *adāva, adāma*. By

A 3.4.92: **आड्डुत्तमस्य पिच्च।** (*āḍ uttamasya pic ca*)

an uttama ending (*uttamasya*) that replaces *loṭ* receives the initial augment *āṭ* and is marked with *p*.

Now, *loṭ* bears the marker *ṭ*, so that A 3.4.79-80 (396) apply to ātmanepada endings which replace this L-affix. In addition,

A 3.4.90: **आमेतः।** (*ām etaḥ*)

provides that *ām* replaces *e* (*etaḥ*) gotten thereby, as in *pacatām* (< ... *pac-te* < *pac-ta*), *pacetām* (< ... *pac-āte* < *pac-ātām*). In order to account for forms of the type *pacasva* (2sg.), *pacadhvam* (2pl.), however, an exception to A 3.4.90 is necessary:

A 3.4.91: **सवाभ्यां वामौ।** (*savābhyāṁ vāmau*)

provides that *e* of a *loṭ* ending is replaced by *va* and *am* (*vāmau*) after *s* and *v* (*savābhyām*) respectively. In addition, *ai* substitutes for *e* of an uttama ending derived from *loṭ*:

A 3.4.93: **एत ऐ (उत्तमस्य)** (*eta ai* [*uttamasya* 92])

E.g., *karavai, karavāvahai, karavāmahai*.

399 Endings that replace *leṭ* (A 3.4.7 [233]) are subject to operations given in

A 3.4.94: **लेटोऽडाटौ।** (*leṭo'ḍāṭau*)

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A 3.4.95: **आत ऐ।** (*āta ai*)

A 3.4.96: **वैतोऽन्यत्रा।** (*vaito'nyatra*)

A 3.4.97: **इतश्च लोपः परस्मैपदेषु।** (*itaś ca lopaḥ parasmaipadeṣu*)

A 3.4.98: **स उत्तमस्य।** (*sa uttamasya*)

By the first of these sūtras, a *leṭ* ending receives either of two initial augments, *aṭ, āṭ*; e.g., *joṣiṣat* (3sg. subj. < ... *juṣ-at* < *juṣ-t*) 'will, should enjoy', *patāti* (< ... *pat-āti* < *pat-ti*) 'will, should fall'. The next two rules introduce *ai* as a replacement for parts of endings. This substitutes for *ā* (*ātaḥ*) of a *leṭ* ending, as in *karavaite* (3du. mid. < ... *kṛ-aite* < *kṛ-āte* < *kṛ-ātām*) 'will, should do', *karavaithe* (2du. < ... *kṛ-aithe* < *kṛ-āthe* < *kṛ-āthām*). It also replaces, optionally (*vā*), *e* in endings other than those where *ai* substitutes for *ā* by the previous rule (*anyatra* 'elsewhere'); e.g., *lśai* (1sg. mid. < ... *lś-e* < *lś-i*) 'will, may have power over'. Also optionally, *-i* in parasmaipada endings (*parasmaipadeṣu*) is replaced by zero (*lopaḥ*); e.g., *joṣiṣat* has the ending *t*, but *patāti* has *ti*. In addition, the *-s* of anuttama ending is optionally dropped to account for forms with the endings *vas / va, mas / ma*, as in *karavāvaḥ, karavāva, karavāmaḥ, karavāma*.

400 The *-s* of an uttama ending derived from an L-affix marked with *ṅ* (*ṅitaḥ*), on the other hand, is obligatorily (*nityam*) deleted:

A 3.4.99: **नित्यं ङितः।** (*nityaṁ ṅitaḥ*)

For example, *apacāva, apacāma* (1du., pl. impfct.) 'cooked' have *va* and *ma* instead of *vas* and *mas* which replace *laṅ*. The *-i* (*itaḥ*) of an ending that replaces an L-affix marked with *ṅ* also is obligatorily dropped:

A 3.4.100: **इतश्च।** (*itaś ca*)

For example, *apacat* (3sg. impfct.), *apacas* (2sg.) have *-t* and *-s* instead of *ti* and *si*. On the other hand, the *-i* of *mip* is not subject to this deletion. For, by

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A 3.4.101: **तस्थस्थमिपांतान्तन्तामः।** (*tasthasthamipāṁ tāntantāmaḥ*)

the endings *tas thas tha mip,* respectively, are replaced by *tām tam ta am* if they derive from an L-affix marked with *ṅ,* as in *apacatām* (3du. impfct.), *apacatam* (2du.), *apacata* (2pl.), *apacam* (1sg. < *apaca-am*).

401 A series of operations applies to endings that are replacements for *liṅ.* All such endings are subject to augmenting as provided for in:

A 3.4.102: **लिङ्स्सीयुट्।** (*liṅas sīyuṭ*)

A 3.4.103: **यासुट् परस्मैपदेषूदात्तो ङिच्च।** (*yāsuṭ parasmaipadeṣūdātto ṅic ca*)

A 3.4.104: **किदाशिषि।** (*kid āśiṣi*)

By A 3.4.103-104, the initial augment *yāsuṭ* occurs in parasmaipada endings (*parasmaipadeṣu*), where this augment has a high-pitched vowel (*udāttaḥ*), and the ending is then marked with *ṅ* (*ṅit*) unless the L-affix is introduced on condition that a wish is expressed (*āśiṣi*), in which case the ending is marked with *k* (*kit*). By A 3.4.102, then, ātmanepada endings that substitute for *liṅ* (*liṅaḥ*) receive the initial augment *sīyuṭ.* For example, *syām* (1sg.) derives from *as-mi,* with *mip* replacing *liṅ.* The ending *mip* is replaced by *am* (A 3.4.101 [400]), which receives the augment *yāsuṭ.* Moreover, the augmented ending is marked with *ṅ,* so that the vowel of *as* is deleted before it (A 6.4.111 [456]): *as-mi* > *as-am* > *as-yāsam* > *as-a-yāsam* (A 3.1.68 [157]) > *as-yāsam* (A 2.4.72 [158]) > *as-yāam* (A 7.2.79 [442]) > *as-yām* (A 6.1.101 [532]) > *syām*; similarly, *vacyām,* from the verb *vac* 'speak, say'. To account for precatives such as *ucyām,* on the other hand, the augmented ending is marked with *k* in order to let it condition samprasāraṇa substitution (A 6.1.15 [388]). *pacevahi* (1du. mid.) is derived from *pac-sīyvahi* with an augmented ending: *pac-vahi* > *pac-sīyvahi* > *pac-a-sīyvahi* > *pac-a-iyvahi* > *pac-à-ivahi* (A 6.1.66 [522]) > *pacevahi* (A 6.1.87 [528]).

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In addition, particular *liṅ* endings are subject to operations as stated in:

A 3.4.105: **झस्य रन्।** (*jhasya ran*)

A 3.4.106: **इटोऽत्।** (*iṭo't*)

A 3.4.107: **सुट् तिथोः।** (*suṭ tithoḥ*)

A 3.4.108: **झेर्जुस्।** (*jher jus*)

The endings *jha iṭ jhi* are replaced by *ran a* (*at*) *jus*, and the augment *s* (*suṭ*: see 18]) is added to *t th* of *liṅ* endings. This augment appears in precative forms (e.g., 3sg. mid. *pakṣīṣṭa*), but is deleted in other forms (A 7.2.79 [442]). For example: *pac-jha* > *pac-ran* > *pac-sīyran* > *pac-a-sīyran* > *pac-a-īyran* > *pac-a-īran* > *paceran*, *pac-i* > *pac-a* > *pac-sīya* > *pac-a-sīya* > *pac-a-īya* > *paceya*, *pac-ta* > *pac-sīysta* > *pac-a-sīysta* > *pac-a-īyta* > *pac-a-īta* > *paceta*, *pac-ta* > *pac-sīysta* > *pac-sīsta* > *pak-sīsta* (A 8.2.30 [544]) > *pakṣīṣṭa* (A 8.3.59 [563]) > *pakṣīṣṭa* (A 8.4.41 [574]), *as-jhi* > *as-us* > *as-yāsus* > *as-yāus* > *as-yus* (A 6.1.96 [531]) > *syus*.

402 The ending *jhi* derived from L-affixes marked with *ṅ* is also replaced by *jus* after *sic* (A 3.1.44 [236]), an abhyasta complex (A 6.1.5 [52]), and the verb *vid* 'know' (*sijabhyasta-vidibhyaḥ*), as well as when it follows *-ā* (*ātaḥ*) after the deletion of *sic*:

A 3.4.109: **सिजभ्यस्तविदिभ्यश्च।** (*sijabhyastavidibhyaś ca*)

A 3.4.110: **आतः।** (*ātaḥ*)

For example: *kṛ-luṅ* > *kṛ-jhi* > ... *kṛ-s-jhi* > *kār-s-jhi* (A 7.2.1 [412]) > *akār-s-jhi* (A 6.4.71 [238]) > *akār-s-us* > *akārṣus* (A 8.3.59 [563]) 'they (have) made, did, have done', *dā-laṅ* > *dā-jhi* > *dā-a-jhi* > *dā-jhi* (A 2.4.75 [158]) > *dā-dā-jhi* (A 6.1.10 [382]) > *adā-dā-jhi* > *ada-dā-jhi* (A 7.4.59 [383]) > *ada-dā-us* > *adadus* (A 6.4.112 [456]) 'they gave', *vid-laṅ* > *vid-jhi* > *vid-a-jhi* > *vid-jhi* > *avid-jhi* > *avidus* 'they knew, learned', *dā-luṅ* > *dā-jhi* > ... *dā-s-jhi* >

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adā-s-jhi > *adā-jhi* (A 2.4.77 [406]) > *adā-us* > *adus* (A 6.1.96 [531]) 'they gave, have given'.

403 There are two triplets of endings called *prathama* (A 1.4.101 [64, figure A]). The three endings in each prathama triplet (*prathamasya*) respectively undergo substitution by *ṭā rau ras* if they derive from *luṭ* (A 3.3.15 [233]):

A 2.4.85: **लुटः प्रथमस्य डारौरसः।** (*luṭaḥ prathamasya ḍāraurasaḥ*)

For example: *kṛ-luṭ* > *kṛ-ti* > *kṛ-ā* > *kṛ-tās-ā* (A 3.1.33 [236]) > *kar-tās-ā* (A 7.3.84 [127]) > *kartā* (A 6.4.143 [503]), *kṛ-luṭ* > *kṛ-tas* > *kṛ-rau* > *kṛ-tās-rau* > *kar-tās-rau* > *kartārau* (A 7.4.51 [435]), *kṛ-luṭ* > *kṛ-jhi* > *kṛ-ras* > *kṛ-tās-ras* > *kar-tās-ras* > *kartāras* 'will do, make'.

404 By A 3.4.100 (400), the *-i* of *tip* and *sip* is dropped if these endings have replaced an L-affix marked with *ṅ*, such as *laṅ*. The resulting affixes *t* and *s*, moreover, are assigned the class name *apṛkta* (A 1.2.41 [74]). According to

A 6.1.68: **हल्ङ्याब्भ्यो दीर्घात्सुतिस्यपृक्तं हल् (लोपः)** (*haliṅyābbhyo dīrghāt sutisy apṛktaṁ hal* [*lopaḥ* 66])

a consonant (*hal*) is deleted (*lopaḥ*) if it is an apṛkta element *su* or one that derives from *ti si*, when such an affix follows a consonant or a feminine suffix *ṅī, āp* (*haliṅyābbhyaḥ*) which has not been subject to shortening (*dīrghāt* 'long vowel'); e.g., *ahan* (2-3sg. impfct.) 'struck, killed' < *ahan-t, ahan-s*.

405 The verbs *krī* 'buy' and *muṣ* 'steal' both take the suffix *śnā* (A 3.1.81 [157]): *krīṇāti, muṣṇāti, krīṇāsi, muṣṇāsi* contain *śnā* before the endings *tip* and *sip*. A vowel-final verb such as *krī* also occurs with *śnā* before *hi* that replaces *sip* derived from *loṭ* (A 3.4.87 [398]): *kṛī-si* > *krī-hi* > *krī-nā-hi* > *krī-nī-hi* (A 6.4.113 [456]) > *krīṇīhi* (A 8.4.2 [570]). The comparable form of a consonant-final verb like *muṣ*, however, is *muṣāṇa*. Accordingly, in

A 3.1.83: **हलः श्नः शानज्झौ।** (*halaḥ śnaḥ śānaj jhau*)

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Pāṇini provides that *śnā* is replaced by *śānac* if it follows a consonant (*halaḥ*) and is followed by *hi* (*hau*). He derives a form like *muṣāṇa* as follows: *muṣ-si* > *muṣ-hi* > *muṣ-nā-hi* > *muṣ-āna-hi* > *muṣ-āna* (A 6.4.105 [455]) > *muṣāṇa*.

406 There are certain verbs such that some of their aorist forms have a suffix *s*, and others do not. For example, from the verb *dā*, one has *ādiṣi* 'I took, have taken' but *adāt* 'he gave, has given'. To account for this, Pāṇini allows *sic* (A 3.1.44 [236]) to be introduced and then dropped:

A 2.4.77: **गातिस्थाघुपाभूभ्यः सिचः परस्मैपदेषु (लुक्)** (*gātisthāghupābhūbhyaḥ sicaḥ parasmaipadeṣu* [*luk* 58])

provides that after *gā* 'go' (*gāti*), *sthā* 'be in place', verbs of the ghu set (A 1.1.20 [51]), *pā* 'drink', and *bhū* 'be, become', *sic* is replaced by zero (*luk*) when parasmaipada suffixes follow (*parasmaipadeṣu*); e.g., *agāt, asthāt, adāt, apāt, abhūt*. *dheṭ* 'suck' belongs to the ghu class, but *sic* is not obligatorily dropped after this verb with parasmaipada endings, contrary to A 2.4.77; e.g., *adhāsīt, adhāt*. Another rule is obviously required.

A 2.4.78: **विभाषा घ्राधेट्शाच्छासः।** (*vibhāṣā ghrādheṭ-śācchāsaḥ*)

lets *sic* be deleted optionally (*vibhāṣā*) before parasmaipada endings after the verbs *ghrā* 'smell, sniff' (*aghrāsīt, aghrāt*), *dheṭ, śā* (< *śo*: A 6.1.45 [392]) 'sharpen' (*aśāsīt, aśāt*), *chā* (< *cho*) 'cut' (*acchāsīt, acchāt*), *sā* (< *so*) 'conclude, terminate' (*asāsīt, asāt*).

A 2.4.79: **तनादिभ्यस्तथासोः।** (*tanādibhyas tathāsoḥ*)

serves to account for forms in which *sic* does not appear before certain ātmanepada endings: This affix is optionally dropped after verbs of the group that begins with *tan* (*tanādibhyaḥ*: 155, 177]), if *ta* or *thās* follows (*tathāsoḥ*); e.g., *atanīṣṭa / atata, atanīṣṭhāḥ / atathāḥ*.

407 Certain Vedic aorist forms lack a suffix *sic* or *an*. For

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example, *akṣan* '... ate, have eaten', *agman* 'went,have gone' do not have *aṅ*, which occurs in *aghasan* and *agaman*, forms of the verbs *ghasḷ̇* and *gamḷ̇* (A 3.1.55 [236]); *hvar* (< *hvar-s*) of *mā hvaḥ* 'do not totter', *var* (< *var-t*) of *vi vaḥ* 'has uncovered', *aprāt* 'has filled', *vark* (< ... *varj-s*) of *mā parā vark* 'do not turn away', *akran* 'have made', *ajñata* 'have arisen' lack the suffix ***sic*** found in *hvārṣīḥ*, *avariṣam* (1sg. [3sg. *avarīt*]), *aprāsiṣam* (3sg. *aprāsīt*), *avarjiṣam* (2sg. neg. imper.: *mā varjīḥ*), *akārṣuḥ*, *ajaniṣata*. Since not all the verbs in question take ***sic***, it is of course not proper to introduce this suffix after them and then delete it. Nor is it acceptable to do this for the verbs which do take ***sic*** in non-Vedic usage. Accented forms with ***sic*** have high pitch optionally on their first vowels (A 6.1.187 [600]), and this applies even if ***sic*** is dropped, so that a form like *dhātām* (3du.) is allowed to have a high-pitched first or second vowel. This should not be allowed, however, for comparable forms of the verbs under consideration. Accordingly, by

A 2.4.80: **मन्त्रे घसह्वरणशवृदहाद्वृच्कृगमिजनिभ्यो लेः।**
(*mantre ghasahvaraṇaśavṛdahādvṛckṛgami-janibhyo leḥ*)

Pāṇini provides that, in mantra usage (*mantre*), the abstract element *li* which is generally replaced by ***sic*** --- that is, *cli* --- is deleted after *ghas*, *hvṛ*, *naś*, *vṛ*, *dah*, verbs in *-ā*, *vṛj*, *kṛ*, *gam*, and *jan*; see 410.

408 The abstract suffix *li* that follows *ām* (*āmaḥ*: A 3.1.35 [286]), that is, *liṭ*, is also deleted:

A 2.4.81: **आमः।** (*āmaḥ*)

409 As I have pointed out (295), items such as *-su*, *-ci* in *somasut*, *agnicit* are derived in the same way as agent nouns like *soṭṛ* and *ceṭṛ*, by introducing an agentive affix after verbs. The affix in question is ***kvip***, which is always deleted. According to

A 6.1.67: **वेरपृक्तस्य (लोपः)** (*ver apṛktasya* [*lopaḥ* 66])

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an element *vi* (*veḥ*) which is aprkta (*aprktasya*: A 1.2.41 [74]) --- that is, one whose *i* is a nasalized vowel serving as a marker, hence deleted unconditionally --- is replaced by zero. After the affix has been dropped, an operation conditioned by a suffix marked with *k* nevertheless still applies (A 1.1.62 [103]): the final augment *tuk* is added (A 6.1.71 [394]) to the short vowels *-u, -i* of *-su, -ci*.

Remark.

410 Details concerning forms accounted for by A 2.4.80 (407) and Vedic passages in which they occur are dealt with in part VII.1 of my work. In the present context, I need only comment briefly on two of the verbs with which the sūtra is concerned. The rule accounts for forms like *prá ṇak* in passages such as RV 1.18.3b, 7.94.8b, VS 3.30b: **(मा नः ...) धूर्तिः प्रणङ् मर्त्यस्य।**. Western exegetes interpret *prá ṇāk* as a root aorist form of *naś* 'reach', etymologically connected with *aś*: '(Let not) the crookedness of a ... mortal reach us.' This interpretation is also given by Indian commentators, who say *prá ṇak* derives from *naś* 'reach, encompass'. Thus, for example, Uvaṭa in his commentary on VS 3.30: **प्रपूर्वस्य नशेर्ण्याप्त्यर्थस्यैतद्रूपम्।**. In addition, however, the form is said to derive from *ṇaś* 'disappear, perish'. For example, the Kāśikā on A 2.4.80 quotes the Vedic passage given above and refers the form *prá ṇak* to this verb; in its comments, the Nyāsa explicitly says the verb in question is *ṇaś* 'disappear' (II.322: **णश अदर्शने**). In his comments on VS 3.30, Mahīdhara gives both alternatives. Moreover, under the interpretation that derives *prá ṇak* from *ṇaś* 'disappear', he takes this form to have causative meaning, and paraphrases it with *nāśayatu*. **[मा प्रणक् प्रकर्षेण व्याप्नोतु। नशिर्ण्याप्त्यर्थः। यद्वा नश अदर्शने। मा प्रणक् प्रकर्षेण मा नाशयतु।]** A 2.4.80 also serves to account for

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root aorist forms such as *dhak* (3sg. inj.), which Western interpreters derive from *dagh* 'reach'. It is patent, however, that Pāṇini's sūtra refers to *dah*. Pāṇinīyas and others also derive *dhak* and such from *dah*, although they give contextually appropriate glosses, not just 'burn'. For example, in his commentary on RV 6.61.14, Sāyaṇa glosses *mā́... ā́ dhak* with *nābhidaha* and then explains that this means 'do not push away'. [मा ... आ धक् नाभिदह न बाधस्व।] Commenting on the same passage repeated in TBr. 2.4.3.1, Sāyaṇa glosses with *mā dhākṣīḥ*, then says this means 'do not cause to disappear, to perish'. [मा धक् मा धाक्षीः मा विनाशय।]

2.7.1.3.2. Rules headed by A 6.4.1.

411 Verbal stems take part in a number of operations, including various replacements and the addition of augments, provided for by sūtras in the section which A 6.4.1 (105) heads. Some of these have already been considered in other contexts (see 124, 126-127, 144-153, 383-387).

412 Vṛddhi vowels (A 1.1.1 [9]) replace vowels --- *iī uū ṛṝ ḹ* unless otherwise specified (A 1.1.3 [97]) --- of particular verb stems. The following sūtras provide for such replacement in stems before *sic* (*sici*: A 3.1.44 [236]) followed by parasmaipada endings (*parasmaipadeṣu*: A 1.4.99 [64]):

A 7.2.1: सिचि वृद्धिः परस्मैपदेषु। (*sici vṛddhiḥ parasmaipadeṣu*)

A 7.2.2: अतो ल्रान्तस्य। (*ato lrāntasya*)

A 7.2.3: वदव्रजहलन्तस्याचः। (*vadavrajahalantasyācaḥ*)

According to A 7.2.1, vṛddhi substitution applies to the final sound (A 1.1.52 [95]) of a stem that ends in an *i-*, *u-*, or *ṛ-* vowel; e.g., *acaiṣīt* (3sg. act.) '(has) heaped, gathered' (< ... *ci-s-īt*), *anaiṣīt* '(has) led' (< ... *nī-s-īt*), *aśrauṣīt* '(has) heard' (< *śru-s-īt*), *alāvīt* '(has) cut' (< ... *lū-is-īt*), *akārṣīt* 'did, has

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done, (has) made' (< ... *kṛ-s-ít*). By A 7.2.2, the vṛddhi vowel *ā* (A 1.1.50 [92]) replaces *a* (*ataḥ*) of a stem that ends with *l* or *r* (*lrāntasya*), as in *akṣārīt* '(has) flowed' (< ... *kṣar-is-ít*), *ajvālīt* '(has) flamed' (< ... *jval-is-ít*). A 7.2.3 provides that vṛddhi substitution applies to the vowel (*acaḥ*) of *vao* 'speak, say', *vraj* 'go', as well as other stems that end in consonants (*vadavrajahalantasya*); e.g., *avādīt, avrājīt, apākṣīt* '(has) cooked' (< ... *pac-s-ít*), *acchaitsīt* '(has) cut' (< ... *chid-s-ít*), *arautsīt* '(has) hemmed in' (< ... *rudh-s-ít*); see 414.

413 Contrary to what A 7.2.3 (412) allows in general, however, vṛddhi replacement does not (*na*) take place in a consonant-final stem followed by *iṭ* (*iṭi*), that is, by *sic* augmented with *iṭ*:

A 7.2.4: **नेटि (हलन्तस्य)** (*neṭi* [*halantasya* 3])

For example: *adevīt* '(has) gambled' (< ... *div-is-ít*), *amoṣīt* 'stole, has stolen' (< ... *muṣ-is-ít*), in which guṇa replacement applies (A 7.3.86 [127]). In addition, by

A 7.2.5: **ह्मयन्तक्षणश्वसजागृणिश्व्येदिताम्** (*hmyantakṣaṇa-śvasajāgṛṇiśvyeditām*)

the following are not subject to vṛddhi substitution before *sic* augmented with *iṭ*: stems in *-h -m -y* (*hmyanta*); the verbs *kṣaṇ* 'hurt, wound', *śvas* 'breath', *jāgṛ* 'awake'; derived verbs with *ṇi*; *śvi* 'swell'; and verbs marked with *e* (*-editām*). For example: *agrahīt* '(has) grasped, seized' (< ... *grah-is-ít*), *avamīt* '(has) vomited' (< ... *vam-is-ít*), *avyayīt* '(has) spent' (< ... *vyay-is-ít*), *akṣaṇīt, aśvasīt, ajāgarīt, aunayīt* '(has) diminished' (< ... *ūn-i-is-ít*), *aśvayīt* (< ... *śvi-is-ít*), *akakhīt* '(has) laughed' (< ... *kakh-is-ít* [*kákhe*]); see 414.

414 In addition, contrary to A 7.2.4 (413), by

A 7.2.7: **अतो हलादेर्लघोः (विभाषा नेटि)** (*ato halāder laghoḥ* [*vibhāṣā* 6, *neṭi* 4])

vṛddhi substitution is only optionally (*vibhāṣā*) precluded for a light vowel (*laghoḥ*) *a* (*ataḥ*) of a stem that begins with a consonant (*halādeḥ*) when this is followed by augmented *sic*

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and parasmaipada endings; e.g., *akaṇīt / akāṇīt* '(has) sounded'. This sūtra would allow vṛddhi only optionally for *vad, vraj*; hence, these verbs are specified in A 7.2.3 (412). A 7.2.7 would also optionally allow vṛddhi for verbs such as *grah*, so that this is absolutedly precluded for these verbs by A 7.2.5 (413).

415 The stem *mṛj-* 'wipe clean' (*mṛjeḥ*) undergoes vṛddhi substitution before all affixes except those that are marked with *k* or *ṅ* (A 1.1.5 [98]):

A 7.2.114: **मृजेर्वृद्धिः।** (*mṛjer vṛddhiḥ*)

For example, *mārṣṭi* (3sg. pres.), *mārṣṭum* (inf.) have *-ār-*: *mṛj-ti* > *mārj-ti* > *mārṣ-ti* (A 8.2.36 [544]) > *mārṣṭi* (A 8.4.41 [574]), *mṛj-tum* > *mārj-tum* > *mārṣ-tum* > *mārṣṭum*. But *mṛṣṭa* (affix *kta*: A 3.2.102 [294]) 'wiped clean' has *-ṛ-*:

416 As provided for in

A 7.3.89: **उतो वृद्धिर्लुकि हलि (पिति सार्वधातुके)**

(*uto vṛddhir luki hali* [*piti sārvadhātuke* 87])

-u (*utaḥ*) of a stem is replaced by the vṛddhi vowel *au* if it is followed by a consonant (*hali*) of a sārvadhātuka affix (*sārvadhātuke*: A 3.4.113, 117 [63]) marked with *p* (*piti*), on condition that an affix has been replaced by *luk* after the stem in question. For example, the vikaraṇa *śap* is deleted after *stu* 'praise', a verb of the second major group in the dhātupāṭha (A 2.4.72 [158]); before an ending such as *tip*, the *-u* of *stu-* is then replaced by *-au*: *stauti* (3sg. pres.).

417 Certain affixes are given particular markers to show that they condition vṛddhi replacement in stems. Thus, according to

A 7.2.115: **अचो ञ्णिति (वृद्धिः)** (*aco ñṇiti* [*vṛddhiḥ* 114])

A 7.2.116: **अत उपधायाः।** (*ata upadhāyāḥ*)

final vowels (*acaḥ* [gen. sg.]) and penultimate (*upadhāyāḥ*) short *a* (*ataḥ*) of stems are replaced by vṛddhi vowels before affixes that are marked with *ñ* or *ṇ* (*ñṇiti*). For example, *ghañ* (A 3.3.18-19 [111, 114]) is marked with *ñ*, *ṇvul* (A 3.1.133 [248]) and *ṇic* (A 3.1.25-26 [281]) with *ṇ*: *bhṛ-a* > *bhāra* 'load',

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pac-a › *pāc-a* › *pāka* (A 7.3.52 [431]) 'cooking', *nī-vu* › *nī-aka* (A 7.1.1 [509]) › *nai-aka* › *nāyaka* (A 6.1.78 [524]) 'leader, hero', *nī-i* › *nai-i* › *nāy-i* 'cause to lead', *pac-i* › *pāc-i* 'cause to cook'.

418 As a general rule, before sārvadhātuka or ārdhadhātuka affixes guṇa substitution applies to stem-final *i- u- ṛ-* and *ḷ-* vowels. The same replacement applies to these vowels if they are the penultimate sounds of stems, in which case they must be light vowels, except in stems that end with the augment *puk* (A 7.3.84, 86 [127]). In accordance with A 1.1.5 (98), guṇa replacement is excluded before an affix marked with *k, g* or *ṅ*. The suffix *śyan* (A 3.1.69 [157]) and the ending *jus* (< *jhi*: A 3.4.108-110 [401-402]) are marked with *ñ* (A 1.2.4 [513]). Hence, special rules are stated to allow guṇa substition before these affixes:

A 7.3.82: **मिदेर्गुणः (शिति)** (*mider guṇaḥ* [*śiti* 75])

A 7.3.83: **जुसि च।** (*jusi ca*)

The guṇa vowel *e* replaces the *i* of *mid* 'be moist, melt' before an affix marked with *ś* (*śiti*), and guṇa substitution also applies before *jus* (*jusi*); e.g., *mid-ya-ti* › *medyati* (3sg. pres.), *hu-jhi* ... › *ajhuhu-us* › ... *ajuho-us* › ... *ajuhavus* (A 6.1.78 [524]) 'offered oblations'.

Similarly, endings that replace *liṭ* and do not have the marker *p*, if they follow a verb that does not end in a cluster, are marked with *k* (A 1.2.5 [514]) to show that they do not regularly condition guṇa substitution. But verbs of the type *svṛ* 'sound', which end in *ṛ* (*ṛtaḥ*) and begin with clusters (*saṁyogādeḥ*), have forms with *-ar*; e.g., *sasvaratuḥ* (3du. pfct.), *sasvaruḥ* (3pl.). Hence,

A 7.4.10: **ऋतश्च संयोगादेर्गुणः (लिटि)** (*ṛtaś ca saṁyogāder guṇaḥ* [*liṭi* 9])

provides that a guṇa vowel substitutes for the final sound of such a verb stem before an ending that derives from *liṭ*. Further, according to

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A 7.4.11: ऋच्छत्यृताम्। (*ṛcchatyṛtām*)

guṇa replacement applies to *ṛcch* 'go', *ṛ* 'move, set in motion', and verbs with *-ṝ*, also before endings that derive from *liṭ*. For example: *ṛcch-a* (3sg.) > *arcch-a* > *arcch-arcch-a* (A 6.1.8 [382]) > *a-arcch-a* (A 7.4.60 [383]) > *ā-arcch- a* (A 7.4.70 [385]) > *ānarccha* (A 7.4.71), *ṛ-atus* > *ar-atus* > *ṛ-ar-atus* (A 1.1.59 [101]) > *ar-ar-atus* (A 7.4.66 [384]) > *a-ar-atus* > *ā-ar-atus* > *āratus* (A 6.1.101 [532]), *kṝ-atus* > *kar-atus* > *kṝ-kar-atus* > *cṝ-kar-atus* (A 7.4.62 [383]) > *car-kar-atus* > *cakaratus* 'strewed, scattered'. The vowel of *ṛcch* is not light, so that it is not subject to guṇa replacement by A 7.3.86.

The vikaraṇa *aṅ* (e.g., A 3.1.55-57 [236]) also conditions guṇa replacement for particular stems, those which end in *ṛ*-vowels and the verb *dṛś* (*dṛśir*) 'see, look':

A 7.4.16: ऋदृशोऽङि गुणः। (*ṛdṛśo'ṅi guṇaḥ*)

E.g., *asarat* 'went' (< ... *sṛ-a-t*), *adarśat*.

419 The verb *śīṅ* 'lie' undergoes guṇa substitution before sārvadhātuka suffixes in general; before *y-* (*yi*) of affixes marked with *k* or *ṅ* (*kṅiti*), on the other hand, its vowel is replaced by *ay* (*ayaṅ*: A 1.1.53 [95]):

A 7.4.21: शीङः सार्वधातुके गुणः। (*śīṅaḥ sārvadhātuke guṇaḥ*)

A 7.4.22: अयङ् यि क्ङिति। (*ayaṅ yi kṅiti*)

E.g., *śete* (3sg. pres.) < *śī-te*, *śayyate* < *śī-ya-te* (affix *yak*: A 3.1.67 [156]).

420 On the other hand, guṇa replacement has to be excluded in particular instances where it would otherwise apply by the general rules A 7.3.84, 86 (127). Thus, according to

A 7.3.87: नाभ्यस्तस्याचि पिति सार्वधातुके। (*nābhyastasyāci piti sārvadhātuke*)

A 7.3.88: भूसुवोस्तिङि। (*bhūsuvos tiṅi*)

a light penultimate vowel is not subject to guṇa substitution if the stem in question is an abhyasta element (*nābhyastasya*: A

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6.1.5 [52]) followed by a vowel (*aci*) that is the first sound of a sārvadhātuka suffix marked with *p* (*piti sārvadhātuke*), and guṇa replacement does not apply to the vowels of *bhū* 'be, become', *sū* 'give rise to, engender' before a sārvadhātuka verb ending (*tiṅi*). For example: *nenijāni* 'let me wash' (1sg. subj. < *nenij-āni* < ... *nij-mi*: A 7.4.75 [385]), *anenijam* (1sg. impfct.) *abhūt* (< *abhū-s-t*: A 2.4.77 [406]), *suvai* (< *sū-ai*: A 6.4.77 [452]) < ... *sū-āe*: A 3.4.92-93 [398]).

421 A stem that ends in a samprasāraṇa vowel preceded by a consonant (*halaḥ*), has its final vowel replaced by a long one (*dīrghaḥ*):

A 6.4.2: **हलः (सम्प्रसारणस्य दीर्घः)** (*halaḥ* [*samprasāraṇasya* 6.3.139, *dīrghaḥ* 111])

For example, *śvi-* undergoes samprasāraṇa substitution before *kta* (A 6.1.15 [388]), and the samprasāraṇa vowel *-u* thus gotten is replaced by *-ū*: *śvi-ta* > *śui-ta* > *śu-ta* > *śū-ta* > *śūna* (A 8.2.45 [549]).

422 The penultimate (*upadhāyāḥ*: A 1.1.65 [41]) vowel (A 1.2.28 [96]) of a stem that ends in a nasal (*anunāsikasya*: A 1.1.8, 72 [39, 30]) is replaced by a long vowel before *kvi* or an affix that begins with a consonant other than a semivowel or nasal (*kvijhaloḥ*) and is marked with *k* or *ṅ* (*kṅiti*):

A 6.4.15: **अनुनासिकस्य क्विझलोः क्ङिति (उपधायाः दीर्घः)** (*anunāsikasya kvijhaloḥ kṅiti* [*upadhāyāḥ* 7, *dīrghaḥ* 6.3.111])

For example: *śam-ta* (affix *kta*: A 3.2.102 [294]) > *śām-ta* > *śāṁ-ta* (A 8.3.24 [559]) > *śānta* (A 8.4.58 [580]) 'calmed, peaceful'.

In addition, before the suffix *san* (*sani*: A 3.1.7 [279]), the final vowel of a stem as well as the penultimate vowels of *han* 'strike, kill', *gam* 'go' (*ajjhanagamām*) are replaced by long vowels, and this substitution applies optionally (*vibhāṣā*) to *tan* 'stretch' (*tanoteḥ*) before the same suffix:

A 6.4.16: **अज्झनगमां सनि** (*ajjhanagamāṁ sani*)

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A 6.4.17: **तनोतेर्विभाषा।** (*tanoter vibhāṣā*)

For example: *kṛ-sa* > *kī-sa* > *kir-sa-* (A 7.1.100 [423]) > *kir-kir-sa* (A 6.1.9 [382]) > *cir-kir-sa* (A 7.4.62 [383]) > *ci-kir-sa* (A 7.4.60) > *ci-kīr-sa* (A 8.2.77 [552]) > *cikīrṣa* (A 8.3.59 [563]), *tan-sa* > *tān-sa* > *tān-tān-sa* > *tan-tān-sa* (A 7.4.59 [383]) > *ta-tān-sa* > *ti-tān-sa* (A 7.4.79 [385]) > *titāṁsa* (A 8.3.24), *tan-sa* > ... *titaṁsa*.

423 Some verbs are taught with primitive *ṝ*, and others have this vowel as a result of substitution before an affix. For example, *kṝ* 'strew, scatter' and *kṝt* 'praise' have primitive *ṝ*, but the vowel of *kṝ* in *kṝ-sa* 'wish to do, make' is a replacement for *-ṛ* (A 6.4.16 [422]). According to

A 7.1.100: **ऋत इद्धातोः।** (*ṛta id dhātoḥ*)

-ṝ of a verb stem is replaced by *-i* (*it*), which is automatically followed by *r* (A 1.1.51 [93]), and

A 7.1.101: **उपधायाश्च।** (*upadhāyāś ca*)

provides that this substitution applies also to penultimate (*upadhāyāḥ*) *ṝ* of a verb stem; e.g., *kṝ-a-ti* > *kirati* (3sg. pres.), *kṝ-sa* > *kir-sa* > ... *cikīrṣa*, *kṝt-i* > *kirt-i* > *kīrt-i* (A 8.2.78 [552], e.g., 3sg. pres. *kīrtayati*). On the other hand, the substitute for *ṝ* preceded by a labial sound (*oṣṭhyapūrvasya*) is *u* (*ut*):

A 7.1.102: **उदोष्ठ्यपूर्वस्य।** (*udoṣṭhyapūrvasya*)

For example: *pṝ-ta* > *pur-ta* > *pūr-ta* > *pūr-na* (A 8.2.42 [549]) > *pūrṇa* (A 8.4.1 [570]) 'full', *mṛ-sa* > *mur-sa* > ... *mumūrṣa* 'wish to die, be about to die'.

424 Before *śyan* (A 3.1.69 [157]), *-o* (*otaḥ*) of a stem is dropped:

A 7.3.71: **ओतः श्यनि (लोपः)** (*otaḥ śyani* [*lopaḥ* 70])

E.g.,, *cho-ya-ti* > *chyati* 'cuts'. Also before *śyan*, the vowel of each of eight (*aṣṭānām*) verbs in the subgroup that begins with *śam* (*śamām*: 163) is replaced by a long vowel, as in *śāmyati*:

A 7.3.74: **शमामष्टानां दीर्घः श्यनि।** (*śamām aṣṭānāṁ*

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dīrghaḥ śyani)

Before any affix marked with *ś* (*śiti*), long-vowel substitution applies to the base vowels of *ṣṭhiv* 'spit', *klam* 'languish', *ā-cam* 'sip', and the vowel of *kram* 'stride' is replaced by a long one if the stem is followed by a suffix marked with *ś* that in turn has parasmaipada endings after it (*parasmaipadeṣu*):

A 7.3.75: ष्ठिवुक्लम्याचमां शिति। (*ṣṭhivuklamyācamāṁ śiti*)

A 7.3.76: क्रमः परस्मैपदेषु। (*kramaḥ parasmaipadeṣu*)

E.g. *ṣṭhīvati, klāmati, klāmyati, ā cāmati, krāmati.*

On the other hand, the vowels of verbs in the subgroup beginning with *pū* (*pvādīnām*: 165) are replaced by short vowels (*hrasvaḥ*) if an affix marked with *ś* follows, as in *punāti*:

A 7.3.80: प्वादीनां ह्रस्वः। (*pvādīnāṁ hrasvaḥ*)

425 The *-a* (*ataḥ*) of a stem is replaced by a long vowel (*dīrghaḥ*) before a sārvadhātuka affix (A 3.4.113, 117 [63]) that begins with a sound of the group which the abbreviation *yañ* denotes (129):

A 7.3.101: अतो दीर्घो यञि (सार्वधातुके) (*ato dīrgho yañi* [*sārvadhātuke* 95])

E.g., *pacāmi* (< *pac-a-mi*) 'I am cooking', *pacāvaḥ* (< ... *pac-a-vas*) 'we two are cooking', *pacāmaḥ* (< ... *pac-a-mas*) 'we all are cooking'.

426 A long vowel substitutes for the final vowel of a stem followed by *y* (*yi*) of an affix marked with *k* or *ṅ*, provided the affix is not a kṛt or sārvadhātuka item (*akṛtsārvadhātukayoḥ*: A 3..1.93, 3.4.113, 117 [66, 63]):

A 7.4.25: अकृत्सार्वधातुकयोर्दीर्घः (यि क्ङिति) (*akṛtsārvadhātukayor dīrghaḥ* [*yi kṅiti* 22])

For example: *cīyate* 'is gathered, heaped' (< *ci-ya-te*, affix *yak*: A 3.1.67 [156]), *stūyate* 'is praised' (< *stu-ya-te*); *cecīya* (< ...

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ci-ya, affix *yaṅ*: A 3.1.22 [280]), *toṣṭūya* (< ... *stu-ya*).

427 By A 7.4.25, the *-ṛ* of *kṛ* 'make, do' would be replaced by *-ṝ* before *yak* and *yaṅ*, so that one would derive *kīrya* (*kīryate, cekīryate*). However, *kīrya* should be from *kṝ* 'strew, scatter'; the comparable derivates of *kṛ* should have *kri-* (*kriyate*), *krī-* (*cekrīyate*). Accordingiy,

A 7.4.27: रीङ् ऋतः। (*rīṅ ṛtaḥ*)

A 7.4.28: रिङ् शयग्लिङ्क्षु (*riṅ śayagliṅkṣu*)

provide that *-ṛ* (*ṛtaḥ*) of a stem is generally replaced by *-rī* (*ṛīṅ*: A 1.1.53 [95]) in the contexts covered by A 7.4.25 (and A 7.4.26 [485]) but that *-ri* substitutes for *-ṛ* in particular contexts: before *śa* (A 3.1.77 [157]), *yak*, and endings that derive from *liṅ*. These sūtras account not only for examples such as *kriyate, cekrīyate*, but also for others such as *ā driyate* 'considers, respects' (< ... *dṛ-a-te*, with suffix *śa*), *kriyāt* (3sg. prec. < ... *kṛ-yāsṭ*).

On the other hand, from *ṛ* 'go, move' one has forms of the types *aryate* (< *ṛ-ya-te*), *aryāt* (< *ṛ-yāsṭ*), which are the norm for verbs in which *-ṛ* follows an initial cluster, as in *smaryate, smaryāt, sāsmaryate* from *smṛ* 'remember' Therefore, in

A 7.4.29: गुणोऽर्तिसंयोगाद्योः। (*guṇo'rtisaṁyogādyoḥ*)

A 7.4.30: यङि च। (*yaṅi ca*)

Pāṇini lets a guṇa vowel replace *ṛ* of the verb *ṛ* and of verbs with initial clusters (*arttisaṁyogādyoḥ*) if this vowel is followed by the *y-* of *yak* and endings deriving from *liṅ* as well as before the *y-* of *yaṅ*.

428 Before *yaṅ*, the *-ā* of *ghrā* 'smell, sniff' and *dhmā* 'blow' is replaced by *I*, as provided for in

A 7.4.31: ई घ्राध्मोः। (*I ghrādhmoḥ*)

ghrā-ya > *ghrī-ya* > *ghrī-ghrī-ya* (A 6.1.9 [382]) > *ghre-ghrī-ya* (A 7.4.82 [386]) > *ghe-ghrī-ya* (A 7.4.60 [383]) > *jhe-ghrī-ya* (A 7.4.62) > *jeghrīya* (A 8.4.54 [577]), *dhmā-ya* >

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... *dedhmīya* (3sg. pres. *jeghrīyate, dedhmīyate*).

429 Short *ī* (*it*) replaces the stem vowel *-ā* of *dā* 'cut' (< *do*: A 6.1.45 [392]), *sā* 'finish, terminate' (< *so*), *mā* 'measure', and *sthā* 'be in place' when these occur before *t* (*ti*) of an affix marked with *k* (*kiti*), and the same substitution applies optionally (*anyatarasyām*) in the same context to the *-ā* of *śā* (< *śo*) 'sharpen', *chā* (< *cho*) 'cut':

A 7.4.40: **द्यतिस्यतिमास्थामित्तिकिति।** (*dyatisyatimāsthām it ti kiti*)

A 7.4.41: **शाछोरन्यतरस्याम्।** (*śāchor anyatarasyām*)

E.g.: *dita, sita, mita, sthita, śita* / *śāta, chita* / *chāta,* with the suffix *kta* (A 3.2.102 [294]).

430 The following sūtras provide for replacing parts of verb stems not only before *kvi* or an affix that is marked with *k, ṅ* and begins with a consonant other than a semivowel or nasal (A 6.4.15 [422]) but also before a nasal (*anunāsike ca*):

A 6.4.19: **च्छ्वोः शूडनुनासिके च।** (*cchvoḥ śūḍ anunāsike ca*)

A 6.4. 20: **ज्वरत्वरस्रिव्यविमवामुपधायाश्च।** (*jvaratvarasrivyavimavām upadhāyāś ca*)

By the first rule, *ś* and *ūṭh* respectively substitute for *-tch* (< *-ch*: A 6.1.73 [536]) and *-v* (*cchvoḥ*). For example: *div-ta* > *diū-ta* > *dyūta* (A 6.1.77 [125]) 'gambled', *pratch-na* (A 3.3.90 [291]) > *praśna* 'question', *akṣadiv-* > *akṣadiū-* > *akṣadyū-* 'one who gambles with dice'. The next sūtra provides for replacing not only the *v* but also the penultimate sound (*upadhāyāś ca*) of the verbs *jvar* 'be warm, feverish', *tvar* 'rush', *sriv* 'dry', *av* 'help', *mav* 'bind'. For example: *jvar-ti* (affix *ktin*: A 3.3.94 [114]) > *jūūr-ti* > *jūrti* (A 6.1.108 [533]), *tvar-ti* > ... *tūrti, sriv-ti* > ... *srūti, av-ti* > ... *ūti, mav-ti* > ... *mūti.*

431 A series of sūtras provides for velar stops (*ku*: A 1.1.69 [84]) to replace certain sounds of stems in particular contexts. Thus, according to

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A 7.3.52: **चजोः कु घिण्ण्यतोः।** (*cajoḥ ku ghiṇṇyatoḥ*)

-c and *-j* (*cajoḥ*) of a verb stem are replaced by velar stops before an affix marked with *gh* (*ghit*) and before *ṇyat* (*ghiṇṇyatoḥ*: A 3.1.124 [292]). For example: *pac-a-* (affix *ghañ*: A 3.3.18 [111]) > *pāc-a* (A 7.2.116 [417]) > *pāka* 'cooking', *pac-ya* > *pāc-ya* > *pākya* 'to be cooked'.

The *h* of *han-* 'strike, kill' (*ho hanteḥ*) is replaced by the corresponding velar (*gh*) if this stem occurs before a suffix that is marked with *ñ* or *ṇ*, and if *h* is followed by *n* (*ñiṇinneṣu*); this substitution applies also (*ca*) after an abhyāsa syllable (*abhyāsāt*: A 6.1.4 [52]):

A 7.3.54: **हो हन्तेर्ञ्णिन्नेषु** (*ho hanter ñṇinneṣu*)

A 7.3.55: **अभ्यासाच्च।** (*abhyāsāc ca*)

For example: *han-a-* (affix *ghañ*) > *ghan-a* > *ghān-a* > *ghāta* (A 7.3.32 [433]) 'striking, killing', *han-jhi* > *han-anti* (A 7.1.3 [509]) > *hn-anti* (A 6.4.98 [454]) > *ghnanti* 'they strike, kill', *han-a* > ... *jaghāna* (3sg. pfct.).

432 Velar replacement as provided in A 7.3.52 (431) does not (*na*) apply under particular conditions, both phonological and semantic. Thus, by

A 7.3.59: **न क्वादेः।** (*na kvādeḥ*)

the substitution does not apply to a stem that begins with a velar stop (*kvādeḥ*); e.g., *kūja* 'cooing', *garja* 'roaring'.

A 7.3.65: **ण्य आवश्यके।** (*ṇya āvaśyake*)

disallows the substitution before *ṇya* in derivates with the meaning '... necessarily (*āvaśyake*)', and by

A 7.3.67: **वचोऽशब्दसंज्ञायाम्।** (*vaco'śabdasaṃjñāyām*)

velar substitution does not apply to the *-c* of *vac* 'speak, say' before *ṇya* of a derivate other than one which is the name of a speech unit (*aśabdasaṃjñāyām*). For example, *pākya* 'to be cooked' is opposed to *pācya* 'which must be cooked', and *vākya* 'utterance, sentence' (see 227) contrasts with *vācya* 'which is to be said, sayable'.

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433 The *-n* of *han* 'strike, kill' is replaced by *-t* (*hanas taḥ*) before affixes marked with *ñ, ṇ* other than *ciṇ* and *ṇal* (A 3.1.66, 3.4.82 [236, 397]):

A 7.3.32: **हनस्तोऽचिण्णलोः।** (*hanas to'ciṇṇaloḥ*)

E.g., *han-a* > ... *ghāta* (see 431), but *aghāni* (3sg. pass. aor.), *jaghāna.*

434 Suffixes marked with *ś* condition not only vowel replacements (see 424) but also a particular consonant substitution: The final consonants of *iṣ* 'wish, desire', *gam* 'go', *yam* 'extend' (*iṣugamiyamām*) are replaced by *cha* before such an affix:

A 7.3.77: **इषुगमियमां छः।** (*iṣugamiyamāṁ chaḥ*)

For example: *iṣ-a-ti* (affix *śa*: A 3.1.77 [157]) > *ich-a-ti* > *itch-a-ti* (A 6.1.73 [536]) > *icchati* (A 8.4.40 [574]), *gam-a-ti* (affix *śap*: A 3.1.68) > ... *gacchati, yam-a-ti* (affix *śap*) > ... *yacchati.*

435 *-s* of verb stems is subject to particular replacements in certain contexts. As provided for in

A 7.4.49: **सः स्यार्धधातुके (तः)** (*saḥ sy ārdhadhātuke* [*taḥ* 47])

-t substitutes for *-s* (*saḥ*) of a stem before *s-* (*si*) of an ārdhadhātuka affix (*ārdhadhātuke*: A 3.4.114-117 [63]), as in *vatsyati* (< *vas-sya-ti*) 'will remain'. Before *s-*, the *-s* of *tās* (A 3.1.33 [236]) and *as* 'be' (*tāsastyoḥ*) is replaced by zero (*lopaḥ*), and the same substitution applies also (*ca*) before *r-* (*ri*); but *h* (*haḥ*) is the replacement before *e-* (*eti*):

A 7.4.50: **तासस्त्योर्लोपः।** (*tāsastyor lopaḥ*)

A 7.4.51: **रि च।** (*ri ca*)

A 7.4.52: **ह एति।** (*ha eti*)

For example: *kartās-si* > *kartāsi* (2sg. fut.) 'you will do, make (at some time other than today)', *as-si* > *asi* 'you are', *kartās-rau* (A 2.4.85 [403]) > *kartārau* 'they two will do, make', *kartās-e* > *kartāhe* 'I shall do, make (for myself)'.

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436 A group of sūtras concerns substitutions that apply to verb stems before *s*- of the desiderative suffix *san* (*sani*: A 3.1.7 [279]):

A 7.4.54: **सनि मीमाघुरभलभशकपतपदामच इस्।** (*sani mīmāghurabhalabhaśakapatapadām aca is*)

A 7.4.55: **आप्ज्ञप्यृधामीत्।** (*āpjñapyṛdhām īt*)

A 7.4.56: **दम्भ इच्च।** (*dambha ic ca*)

The vowel (*acaḥ*) of *mī* 'harm', 'set', *mā* 'measure', verbs of the ghu class (A 1.1.20 [51]), *rabh* 'take, begin', *labh* 'gain', *śak* 'be able', *pat* 'fall', 'fly', *pad* 'go, fall' is replaced by *is*; *ī* (*it*) substitutes for the *ā*- of *āp* 'reach, obtain', the *-a*- of *jñapi* 'inform, ...' (see 166, 200) and the *ṛ*- of *ṛdh* 'thrive'; *i* (*it*) as well as *ī* replaces the *-a*- of *danbh* 'deceive, harm'. Moreover, in all instances where these replacements apply, the abhyāsa syllable gotten by iterating a syllable of a stem in *-san* (A 6.1.9 [382]) is dropped (*lopo'bhyāsasya*):

A 7.4.58: **अत्र लोपोऽभ्यासस्य।** (*atra lopo'bhyāsasya*)

For example: *mā-sa* > *mis-sa* > *mis-mis-sa* > *mis-sa* > *mitsa* (A 7.4.49 [435]), *dā-sa* > *dis-sa* > ... *ditsa*, *rabh-sa* > ... *risbh-sa* > *ribh-sa* (A 8.2.29 [543]) > *ripsa* (A 8.4.55[578]), *pad-sa* > ... *pisd-sa* > *pid-sa* > *pitsa*, *āp-sa* > ... *īpsa*, *jñap-sa* > ... *jñīpsa*, *ṛdh-sa* > ... *ṛrdh-sa* (A 1.1.51 [93]) > *ṛrtsa*, *danbh-sa* > ... *dīnbh-sa* > *dībh-sa* (A 6.4.24 [446]) > *dhībh-sa* (A 8.2.37 [545]) > *dhīpsa*, *danbh-sa* > ... *dhipsa*.

437 Before a suffix marked with *ś*, some verb stems are entirely replaced by others. As provided for in

A 7.3.78: **पाघ्राध्मास्थाम्नादाण्दृश्यर्त्तिसर्त्तिशदसदां पिब-जिघ्रधमतिष्ठमनयच्छपश्यर्च्छधौशीयसीदाः।** (*pāghrādhmāsthāmnādāṇdṛśyarttisarttiśada-sadāṁ piba jighradhamatiṣṭhamanayaccha-paśyarcchadhauśīyasīdāḥ*)

piba-, *jighra-*, *dhama-*, *tiṣṭha-*, *mana-*, *yacha-*, *paśya-*, *ṛcha-*, *dhau-*, *śīya-*, *sīda-*, respectively, substitute for *pā*- 'drink',

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ghrā- 'sniff, smell', *dhmā-* 'blow', *sthā-* 'be in place', *mnā-* 'memorialize', *dā-* 'give' (*dāṇ*), *dṛś-* 'see, look', *ṛ-* 'move', *sṛ-* 'run', *śad-* 'decay', *sad-* 'sit'. And by

A 7.3.79: **ज्ञाजनोर्जा।** (*jñājanor jā*)

jā- replaces both *jñā-* 'know' and *jan-* 'be born' before affixes marked with *ś*. For example: *pibati* (3sg. pres. < ... *pā-a-ti*, affix *śap*), *jighrati, dhamati, tiṣṭhati, manati, yacchati, paśyati, ṛcchati, dhāvati, śīyate, sīdati, jānāti* (< *jñā-nā-ti*, affix *śnā*), *jāyate* (< *jan-ya-te*, affix *śyan*).

438 In the right context of a suffix that begins with *t* and is marked with *k* (*ti kiti*: A 7.4.40 [429]), certain stems in *-ā* undergo particular substitutions, as provided for in

A 7.4.42: **दधातेर्हिः।** (*dadhāter hiḥ*)

A 7.4.46: **दो दद् घोः।** (*do dad ghoḥ*)

dhā- 'place, make' (*dadhāteḥ*) is replaced by *hi-*, and *dath-* substitutes for *dā-* (*daḥ*) of the ghu class (A 1.1.20 [51]); e.g., *dhā-ta* (affix *kta*) > *hita* 'placed, made', *dā-ta* > *dath-ta* > *datta* (A 8.4.55 [578]) 'given'. On the other hand, contrary to A 7.4.46, if *dā-* occurs after a preverb (*upasargāt*) that ends in a vowel (*acaḥ*), its *-ā* is replaced by *t*:

A 7.4.47: **अच उपसर्गात्तः।** (*aca upasargāt taḥ*)

E.g., *pra-dā-ta* > *pra-dt-ta* > *pra-tt-ta* (A 8.4.55) > *pratta* (A 8.4.65 [583]).

439 Verb stems are also subject to receiving augments. A series of sūtras provides for introducing the augment *num* (A 1.1.47 [16-17]) to certain stems. For example, by

A 7.1.58: **इदितो नुम्धातोः।** (*idito num dhātoḥ*)

num is added to a stem which is a verb (*dhātoḥ*) marked with *i* (*iditaḥ*), as in *nindati* 'scorns, reviles' (verb *ṭuṇidi*), and according to

A 7.1.59: **शे मुचादीनाम्।** (*śe mucādīnām*)

this augment is introduced to verbs of the subgroup beginning with *muc* (*mucādīnām*: 164) when these occur before *śa*

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Before the suffix *añ*, stems with the verbs *pat* 'fall' and *vac* 'speak, say', respectively, receive the augments *pum* and *um*:

A 7.4.19: **पतः पुम् (अङि)** (*pataḥ pum* [*añi* 16])

A 7.4.20: **वच उम्।** (*vaca um*)

E.g., *apat-a-t* > *apaptat* (3sg. aor.), *avac-a-t* > *avaüc-a-t* > *avocat* (A 6.1.87 [528]).

The augment *im* is added to the stem *tṛṇah-*, with the affix *śnam* (A 3.1.78 [157]), before the consonant (*hali*) of a sārvadhātuka affix marked with *p* (*piti sārvadhātuke*):

A 7.3.92: **तृणह इम् (हलि पिति सार्वधातुके)** (*tṛṇaha im* [*hali* 89, *piti sārvadhātuke* 87])

E.g., *tṛnah-mi* > *tṛnaih-mi* > *tṛnehmi* (A 6.1.87) 'I crush'.

Further, a stem in *-a* receives the final augment *muk* (A 1.1.46 [17]) if it occurs before an affix *āna*, as in *pacamāna* 'cooking for oneself' (< *paca-āna*):

A 7.2.82: **आने मुक्।** (*āne muk* [*ataḥ* 80])

The final augment *yuk* is added to a stem in *-ā* (*ātaḥ*) before *ciṇ* (A 3.1.66 [236]) and kṛt affixes (*ciṇkṛtoḥ*: A 3.1.93 [66]):

A 7.3.33: **आतो युक् चिण्कृतोः।** (*āto yuk ciṇkṛtoḥ*)

For example: *adhā-i-ta* > *adhāy-i-ta* > *adhāyi* (A 6.4.104 [239]) 'has been put', *dhā-vu* > *dhā-aka* (A 7.1.1 [509]) > *dhāyaka* 'one who places.'

440 Affixes may undergo replacement and augmenting after certain verb stems. Thus, the *ā-* of *-āna-* is replaced by *ī* after *ās* (*āsīna* < *ās-āna* 'sitting'):

A 7.2.83: **ईदासः (आने)** (*īd āsaḥ* [*āne* 82])

As provided for in

A 7.2.76: **रुदादिभ्यः सार्वधातुके (इट्)** (*rudādibhyaḥ sārvadhātuke* [*iṭ* 66])

the initial augment *iṭ* (A 1.1.46 [17]) is added to a sārvadhātuka

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affix (*sārvadhātuke* : A 3.4.113, 117 [63]) beginning with a consonant other than *y* if it follows a verb of the group beginning with *rud* (*rudādibhyaḥ* : 161). For example *roditi, svapiti, śvasiti, aniti, jakṣiti* have the augmented ending *iti*. According to

A 7.2.77: **ईशः से।** (*īśaḥ se*)

A 7.2.78: **ईडजनोर्ध्वे च।** (*īḍajanor dhve ca*)

iṭ is added to *se* or its replacement used with the verb *īś* 'have power, be able' (e.g., *īśiṣe* [2sg. pres.]), and the same augment is added not only to this ending but also to one with *dhv-*, when such endings are used with *īḍ* 'invoke, praise' (e.g., *īḍiṣe, īḍidhve* [2pl. pres.]) and *jan* 'be born' (*janiṣe, janidhve*).

After the stem *brū-* 'speak, say' (*bruvaḥ*) the initial augment *iṭ* is added to a consonant-initial sārvadhātuka affix marked with *p*, as in *bravīti* (ending *tip*):

A 7.3.93: **ब्रुव ईट् (हलि पिति सार्वधातुके)** (*bruva iṭ* [*hali* 89, *piti sārvadhātuke* 87])

A consonant-initial sārvadhātuka is optionally augmented with *iṭ* after *tu-* 'be strong', *ru-* 'bellow, roar', *stu-* 'praise', *śam-* 'become calm', *am-* 'press towards:

A 7.3.95: **तुरुस्तुशम्यमः सार्वधातुके (वा हलि)**

(*turustuśamyamaḥ sārvadhātuke* [*vā* 94, *hali* 89])

For example: *tavīti* / *tauti, ravīti* / *rauti, stavīti* / *stauti*.

The augment *iṭ* is also added to an aprkta (A 1.2.41 [74]) sārvadhātuka ending which follows *as* 'be' or a stem with *-sic* (*astisicaḥ*: A 3.1.44 [236]):

A 7.3.96: **अस्तिसचोऽपृक्ते (सार्वधातुके ईट्)**

(*astisico'pṛkte* [*sārvadhātuke* 95, *iṭ* 93])

For example: *āsīt* (3sg. impfct.) 'was' (< ... *as-t*), *akārṣīt* 'did, has done, (has) made' (< ... *kṛ-s-t*). After the five (*pañcabhyaḥ*) verbs of the group that begins with *rud* (*rudaḥ*: 161), an aprkta ending is augmented with *iṭ* in most dialects, but, according to Gārgya and Gālava (*gārgyagālavayoḥ*), the augment

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is *aṭ*:

A 7.3.98: **रुदश्च पञ्चभ्यः।** (*rudaś ca pañcabhyaḥ*)

A 7.3.99: **अद् गार्ग्यगालवयोः।** (*ad gārgyagālavayoḥ*)

According to all grammarians (*sarveṣām*), moreover, an aprkta sārvadhātuka affix is augmented with *aṭ* after *ad* 'eat':

A 7.3.100: **अदः सर्वेषाम्।** (*adaḥ sarveṣām*)

For example: *arodīt* (3sg. impfct.), *arodat, ādat.*

441 Endings that substitute for certain basic verb endings by virtue of these deriving from particular L-affixes are themselves subject to replacement under given conditions. *tip* and *mip* are replaced by *ṇal* if they derive from *liṭ* (A 3.4.82 [397]). After a stem in *-ā* (*ātaḥ*), *ṇal* is replaced by *au*, as in *dadau* 'gave' (< ... *dā- au*):

A 7.1.34: **आत औ णलः।** (*āta au ṇalaḥ*)

tātaṁ optionally (*anyatarasyām*) substitutes for *tu* or *hi* (< *tip, sip*: A 3.4.86-87 [398]) used on condition that a wish is to be expressed (*āśiṣi*):

A 7.1.35: **तुह्योस्तातङाशिष्यन्यतरस्याम्।** (*tuhyos tātaṅ āśiṣy anyatarasyām*)

For example, *jīvatāt* 'long may he, you live' alternates with *jīvatu* and *jīva* (< *jīva-hi*: A 6.4.105 [455]).

442 Endings that derive from *liṅ* are augmented with *sīyut, yāsuṭ*, and *suṭ* (A 3.4.102, 103, 107 [401]). If the ending in question is a sārvadhātuka affix (*sārvadhātuke*: see A 3.4.113, 117 [63]), any non-final (*anantyasya*) *s* included in the ending is deleted (*salopaḥ*):

A 7.2.79: **लिङः सलोपोऽनन्त्यस्य (सार्वधातुके)** (*liṅaḥ salopo'nantyasya* [*sārvadhātuke* 76])

For example: *ad-yāsst* > *adyāt* (3sg. opt.) '... should eat', *ad-yāsam* > *ad-yāam* > *adyām* (A 6.1.101 [532]) (1sg. opt.), but *adyāsam* (1sg. prec.), retains *-s-* in the ārdhādhātuka ending *yāsam*. After a stem in *-a* (*ataḥ*), moreover, *iy* substitutes for *yā* of a sārvadhātuka ending that derives from *liṅ*:

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A 7.2.80: **अतो येयः।** (*ato yeyaḥ*)

For example: *bhava-yāsst* > ... *bhava-iyt* > *bhava-it* (A 6.1.66 [522]) > *bhavet* (A 6.1.87 [528]) '... should be', *bhava-yāsam* > ... *bhava-iyam* > *bhaveyam* (1sg. opt.).

443 The *ā*-(*ātaḥ*) of a sārvadhātuka marked with *ñ* (*ñitaḥ*: A 1.2.4 [513]) is also replaced by *iy* after a stem in *-a*:

A 7.2.81: **आतो ङितः।** (*āto ñitaḥ*)

For example: *paca-āte* > *paca-iyte* > *paca-ite* > *pacete* 'they two are cooking for themselves', *paca-āthe* > ... *pacethe* (2du.).

444 A stem with the suffix *ksa* (*ksasya*: A 3.1.45 [236]) has its *-a* replaced by zero (*lopaḥ*) when it occurs before the initial vowel of an ending, and the whole affix *ksa* is optionally (*vā*) replaced by zero (*luk*) if it is used with *duh* 'milk', *dih* 'smear', *lih* 'lick', *guh* 'hide' and followed by an ātmanepada ending (*ātmanepade*) that begins with a dental (*dantye*):

A 7.3.72: **क्सस्याचि (लोपः)** (*ksasyāci* [*lopaḥ* 70])

A 7.3.73: **लुग्वा दुहदिहलिहगुहामात्मनेपदे दन्त्ये।** (*lug vā duhadihalihaguhām ātmanepade dantye*)

For example: *aduh-sa-i* > *aduh-s-i* > *adugh-s-i* (A 8.2.32 [544]) > *adhugh-s-i* (A 8.2.37 [545]) > *adhugh-ṣ-i* (A 8.3.59 [563]) > *adhukṣi* (A 8.4.55 [578]) 'I (have) milked' (1sg. mid. aor.), *aduh-sa-ta* > *aduh-ta* > *adugh-ta* > *adugh-dha* (A 8.2.40 [547]) > *adugdha* (A 8.4.53 [577]), *aduh-sa-ta* > ... *adhukṣata* (3sg.).

2.7.1.3.3. Rules headed by A 6.4.22.

445 A series of operations, whose results are treated as suspended (*asiddhavat*) with respect to each other, is stated in rules of the subsection headed by A 6.4.22 (111). In the present section, I shall simply consider a selection of these sūtras, according to the order in which Pāṇini gives them in the Aṣṭādhyāyī. See also 659-660.

446 A group of rules concerns the deletion of *n* (*nalopaḥ*). By

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A 6.4.23: **श्नान्नलोपः।** (*śnān nalopaḥ*)

n of a stem is deleted if it follows *śna* (*śnāt*), that is, the affix *śnam* (A 3.1.78 [157]); e.g., *anj-ti* > *ananj-ti* > *anaj-ti* > *anag-ti* (A 8.2.30 [544]) > *anakti* (A 8.4.55 [578]) 'smears, anoints'. Penultimate (*upadhāyāḥ*) *n* of verbs not marked with *i* (*aniditām*) is dropped if the stem of which it is a part ends in a consonant (*halaḥ*) and precedes a suffix marked with *k* or *ṅ* (*kṅiti*):

A 6.4.24: **अनिदितां हल उपधायाः क्ङिति।** (*aniditāṁ hala upadhāyāḥ kṅiti*)

For example: *srans-ta* (affix *kta*: A 3.2.102 [294]) > *srasta* 'fallen', *dhvans-ta* > *dhvasta* 'lost, perished'. The penultimate *n* of *daṁś* 'bite', *sanj* 'attach', *svanj* 'embrace' is deleted when *śap* (A 3.1.68 [157]) follows:

A 6.4.25: **दंशसञ्जस्वञ्जां शपि।** (*daṁśasañjasvañjāṁ śapi*)

E.g., *daṁś-a-ti* > *daśati*, *sanj-a-ti* > *sajati*, *svanj-a-te* > *svajate*. The penultimate *n* of *ranj-* 'dye, color' too (*ca*) is dropped, not only before *śap*, but also in a stem followed by *ghañ* introduced on condition that an action or an instrument is to be signified (*bhāvakaraṇayoḥ*: A 3.3.18-19 [111]):

A 6.4.26: **रञ्जेश्च।** (*rañjeś ca*)

A 6.4.27: **घञि च भावकरणयोः।** (*ghañi ca bhāvakaraṇayoḥ*)

For example: *ranj-a-ti* > *rajati*, *ranj-a* > *raj-a* > *rāj-a* (A 7.2.116 [417]) > *rāga* (A 7.3.52 [431]) 'coloring, dye, passion'.

In particular instances, the penultimate *n* of a stem is optionally (*vibhāṣā*) not (*na*) deleted. According to

A 6.4.32: **जान्तनशां विभाषा (क्त्वि न)** (*jāntanaśāṁ vibhāṣā* [*ktvi* 31, *na* 30])

A 6.4.33: **भञ्जेश्च चिणि।** (*bhañjeś ca ciṇi*)

this holds before *ktvā* (*ktvi*: A 3.4.21 [259]) for stems that end

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in *j* as well as *naṁś-* 'disappear, perish' (*jāntanaśām*) and for *bhanj-* 'break' also before *ciṇ* (*ciṇi*: A 3.1.66 [236]). E.g.: *bhanj-tvā* > *bhaj-tvā* > *bhag-tvā* > *bhaktvā*; *bhanj-tvā* > *bhaṁj-tvā* (A 8.3.24 [559]) > *bhaṁg-tvā* > *bhaṁk-tvā* > *bhaṅktvā* (A 8.4.58 [580]) 'after breaking'; *abhanj-i* > *abhaj-i* > *abhāji*, *abhanj-i* > *abhaṁj-i* > *abhañji*.

447 The penultimate sound of *śās-* 'command, instruct' is replaced by *i* (*śāsa it*) if the stem occurs before *ani* (A 3.1.56 [236]) or the consonant (*aṅhaloḥ*) of an affix marked with *k* or *ṅ*:

A 6.4.34: शासइदङ्हलोः (उपधायाः ङिति) (*śāsa id aṅhaloḥ* [*upadhāyāḥ ṅiti* 24])

For example: *aśās-a-t* > *aśis-a-t* > *aśiṣat* (A 8.3.60 [563]) 'instructed' (3sg. aor.), *śās-ta* (affix *kta*: A 3.2.102 [294]) > *śis-ta* > *śiṣ-ta* > *śiṣṭa* (A 8.4.41 [574])) 'instructed'. In addition, the entire stem *śās-* is replaced by *śā-* before the ending *hi* (*hau*: A 3.4.87 [398]):

A 6.4.35: शा हौ (*śā hau*)

śās-hi > *śā-hi* > *śādhi* (A 6.4.101 [455]). Also before *hi*, *ja-* replaces *han-* 'strike, kill', thus accounting for *jahi* 'strike, kill':

A 6.4.36: हन्तेर्जः। (*hanter jaḥ*)

448 Before a consonant other than a semivowel or a nasal (*jhali*) of an affix marked with *k* or *ṅ* (*ṅiti*), certain verbs have their final nasal consonants deleted (*anunāsikalopaḥ*): verbs that are taught with low-pitched base vowels (*anudāttopadeśa*), *van* 'gain', and bases of the group beginining with *tánū* (155, 157):

A 6.4.37: अनुदात्तोपदेशवनतितनोत्यादीनामनुनासिकलोपो झलि ङिति। (*anudāttopadeśa-vanatitanotyādīnām anunāsikalopo jhali ṅiti*)

For example: *gam-ta* (affix *kta*: A 3.2.102 [294]) > *gata* 'gone', *gam-ti* (affix *ktin*: A 3.3.94 [114]) > *gati* 'going, under-

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standing', *van-ti* > *vati*, *tan-ta* > *tata*, *tan-ti* > *tati*.

The *-n* of *jan-* 'engender, be born', *san-* 'win for someone', *khan-* 'dig' (*janasanakhanām*) is replaced by *ā* (*āt*) before the *s-* of *san* (A 3.1.7 [279]) and consonants other than semivowels and nasals (*sañjhaloḥ*) of affixes marked with *k* or *ṅ*:

A 6.4.42: **जनसनखनांसञ्झलोः (आत्)** (*janasana-khanāṁ sañjhaloḥ* [*āt* 41])

For example: *san-sa* > *saā-sa* > *sā-sa* (A 6.1.101 [532]) > *sāsā-sa* (A 6.1.9 [382]) > *sasā-sa* (A 7.4.59 [383]) > *sisā-sa* (A 7.4.79 [385]) > *siṣāsa* (A 8.3.59 [563]), *jan-ta* > *jaā-ta* > *jāta* 'born', *khan-ta* > *khaā-ta* > *khāta* 'dug'. The *-n* of these verbs is only optionally (*vibhāṣā*) replaced by *-ā* before *y-* (*ye*) of an affix marked with *k* or *ṅ*, and *-ā* optionally replaces the final nasal of *tan-* (*tanoteḥ*) before *yak* (A 3.1.67 [156]):

A 6.4.43: **ये विभाषा।** (*ye vibhāṣā*)

A 6.4.44: **तनोतेर्यकि।** (*tanoter yaki*)

For example: *jan-ya-te* (affix *yak*: A 3.1.67) > *jaā-ya-te* > *jāyate* (alternating with *janyate*), *san-ya-te* (affix *yak*) > ... *sāyate* (also *sanyate*), *khan-ya-te* > ... *khāyate* (*khanyate*), *tan-ya-te* > ... *tāyate* (*tanyate*), *jājāyate* / *jājanyate* (... < *jan-ya-*, affix *yaṅ*: A 3.1.22 [280]).

449 The section which A 6.4.22 heads also includes a subgroup of rules, headed by A 6.4.46 (111), which state operations relative to stems before ārdhadhātuka affixes. This subsection extends to A 6.4.71 (238).

450 The *-a* (*ataḥ*) of a verb stem is replaced by zero before any ārdhadhātuka affix, as is the affix *-ya* (*yasya*) following a consonant (*halaḥ*):

A 6.4.48: **अतो लोपः।** (*ato lopaḥ*)

A 6.4.49: **यस्य हलः।** (*yasya halaḥ*)

For example, the desiderative infinitive *cikīrṣitum* 'to wish to make, do', has *cikīrṣ-* instead of *cikīrṣa-* before *-itum*, and the *-ya* of *bebhidya-* in *bebhidya-itum* is deleted: *bebhiditum* 'to

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split intensely, repeatedly.'

A suffix *ṇi* (*ṇeḥ*) is also deleted, before an ārdhadhātuka affix that is not augmented with *iṭ* (*aniṭi*):

A 6.4.51: णेरनिटि। (*ṇer aniṭi*)

For example: *kṛ-i-ya-te* > ... *kāryate* 'is made to be done'. On the other hand, *ay* substitutes for *ṇi* before certain affixes, as in *kārayām* (<... *kṛ-i-ām-lI*: A 2.4.81 [408]) of *kārayāñ cakāra* 'had ... make ..., had ... do' and in *viracayya* 'after composing'. According to

A 6.4.55: अयामन्ताल्वाय्येत्न्विष्णुषु। (*ay āmantālvāyyetnviṣṇuṣu*)

this substitution applies before the affixes *ām, anta, ālu, āyya, itnu,* and *iṣṇu.* By

A 6.4.56: ल्यपि लघुपूर्वात्। (*lyapi laghupūrvāt*)

before *lyap* (*lyapi*: A 7.1.37 [491]), *-ay* substitutes for *-ṇi* which follows a sound that is preceded by a light vowel (*laghupūrvāt*), as in *viracayya* as opposed to *prapātya* 'after making ... fall', where *-ṇi* following *-pāt-* is dropped according to A 6.4.51.

451 Before the initial vowel of an ārdhadhātuka affix marked with *k* or *ṅ* (*aci kṅiti*) and before *iṭ* (*iṭi ca*), the *-ā* of a stem is deleted (*āto lopaḥ*):

A 6.4.64: आतो लोप इटि च (अचि क्ङिति) (*āto lopa iṭi ca* [*aci kṅiti* 63])

For example: *pā-atus* > *p-atus* > *pā-p-atus* (A 1.1.59 [101]) > *papatus* (2pl. pfct.) (A 7.4.59 [383]), *pā-itha* > *p-itha* > ... *papitha* (2sg. pfct.).

Before the affix *yat* (*yati*: A 3.1.97 [122]), the *-ā* of a stem is replaced by *I* (*It*):

A 6.4.65: ईद्यति। (*Id yati*)

For example: *dā-ya* > *dI-ya* > *deya* (A 7.3.84 [127]) 'to be given'. The same substitution applies to the *-ā* of ghu verbs (A 1.1.20 [51]), *mā* 'measure', *sthā* 'be in place', *gā* 'sing', 'study, learn',

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pā 'drink', *hā* 'abandon', *sā* 'conclude, terminate' before the consonant (*hali*) of an ārdhādhātuka suffix that is marked with *k* or *ṅ*:

A 6.4.66: **घुमास्थागापाजहातिसां हलि।** (*ghumāsthāgāpā-jahātisāṁ hali*)

For example: *dā-ya-te* (suffix *yak*: A 3.1.67 [156]) > *dīyate* 'is given', *dāya* (suffix *yaṅ*: A 3.1.22 [280]) > *dīya* > *didīya* (A 6.1.9 [382]) > *dedīya* (A 7.4.82 [386]). Before an ārdhadhātuka that derives from *liṅ* (*liṅi*: A 3.4.116 [63]) and is marked with *k* or *ṅ*, on the other hand, *-ā* of these stems is replaced by *-e*, and this substitution applies optionally (*vā*) to the *-ā* of a stem other (*anyasya*) than those specified in A 6.4.66, provided the verb begins with a cluster (*saṁyogādeḥ*):

A 6.4.67: **एर्लिङि।** (*er liṅi*)

A 6.4.68: **वान्यस्य संयोगादेः।** (*vānyasya saṁyogādeḥ*)

For example: *dā-yāsst* >... *deyāt* 'may ... give', *gleyāt* / *glāyāt* 'may ... languish'. The replacements in question do not (*na*) take effect before *lyap*:

A 6.4.69: **न ल्यपि।** (*na lyapi*)

Thus, one has *pradāya*, with *dā* instead of *dī*. On the other hand, the *-ā* of *mā-* is optionally (*anyatarasyām*) replaced by *i* (*it*) before *lyap*, as in *apamitya* (< *apami-ya*: A 6.1.71 [394]), *apamāya* 'after giving, owing':

A 6.4.70: **मयतेरिदन्यतरस्याम्।** (*mayater id anyatarasyām*)

452 A 6.1.77 (125) is the general rule of semivowel replacement. Under particular conditions, certain stem vowels undergo a different operation. As provided for in

A 6.4.77: **अचि श्नुधातुभ्रुवां य्वोरियङुवङौ।** (*aci śnudhātubhruvāṁ yvor iyaṅuvaṅau*)

before a vowel (*aci*), *iyaṅ* and *uvaṅ* (*iyaṅuvaṅau*), respectively, replace final (A 1.1.53 [95]) *i*-and *u*-vowels (*yvoḥ*) of stems with the suffix *śnu*, stems that are verbal bases, and

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bhrū 'brow' (*śnudhātubhruvām*). For example: *āpnu-anti* > *āpnuvanti* 'they reach, obtain', *kṣi-atus* > *kṣiy-atus* > ... *cikṣiyatus* 'they two dwelt (3du. pfct.)', *lū-atus* > *luv-atus* > ... *luluvatus* 'they two cut', *bhrū-au* > *bhruvau* (nom.-acc. du.). *iyaṅ* and *uvaṅ* also substitute for *i*-and *u*-vowels of abhyāsa syllables when they are followed by heterogeneous vowels (A 6.4.78 [384]).

There are particular instances in which, contrary to what A 6.4.77 allows for, *i*-and *u*-vowels of stems are replaced by semivowels before vowels, so that additional rules are required. Thus, by

A 6.4.81: **इणो यण्।** (*iṇo yaṇ*)

a semivowel (*yaṇ*), specifically *y* (A 1.1.50 [92]), substitutes for the *i* of the verb *iṇ* 'go' (*iṇaḥ*) before vowels of affixes, as in *yanti* 'they go' (< *i-anti*), and according to

A 6.4.82: **एरनेकाचोऽसंयोगपूर्वस्य।** (*er anekāco'saṁyogapūrvasya*)

semivowel replacement applies to a final *i*-vowel (*eḥ*) not preceded by a consonant cluster (*asaṁyogapūrvasya*) in a prevocalic stem that ends with a verb and has more than one vowel (*anekācaḥ*). For example: *ninī-atus* > *ninyatus* 'they two led'. Stems with final *u*-vowels, such as *lulū-* appear with *-uv* before vocalic verb endings, as in *luluvatus*, but verb-final *u*-vowels (*oḥ*) not preceded by clusters in stems of more than one syllable undergo semivowel substitution before nominal endings (*supi*):

A 6.4.83: **ओः सुपि।** (*oḥ supi*)

For example: *śatasū-au* > *śatasvau* (nom.-acc. du.) '... which generate hundreds'. Further, as provided for in

A 6.4.87: **हुश्नुवोः सार्वधातुके।** (*huśnuvoḥ sārvadhātuke*)

the *-u* of *hu-* 'offer oblations' and stems with *śnu* that is not preceded by a cluster is replaced by *-v* before a vowel-initial sārvadhātuka affix; e.g., *juhvati* (3pl .pres. < ... *hu-ati*, see 647), *sunvanti* (< *sunu-anti*) 'they are pressing out juice'.

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453 *bhū*-'be, become' receives the final augment *vuk* before vowels of endings that derive from *luṅ* and *liṭ* (*luṅliṭoḥ*), as in *abhūvan* (3pl. aor.), *babhūva* (3sg. pfct.):

A 6.4.88: **भुवो वुग्लुङ्लिटोः।** (*bhuvo vug luṅliṭoḥ*)

454 The penultimate sounds (*upadhāyāḥ*) of *gam*- 'go', *han*- 'strike, kill', *jan*- 'be born', *khan*- 'dig', *ghas*- 'eat' are replaced by zero (*lopaḥ*) in a stem that precedes a vowel-initial suffix marked with *k* or *ṅ* (*kṅiti*), other than *ārdhadhātuka* (*anārdhadhātuke*: see A 3.1.55 [236]), and this deletion applies to *ghas* and *bhas* 'devour' also before a consonant (*hali ca*) of an affix marked with *k* or *ṅ*:

A 6.4.98: **गमहनजनखनघसांलोपः क्ङित्यनङि (उपधायाः)** (*gamahanajanakhanaghasāṃ lopaḥ kṅity anaṅi* [*upadhāyāḥ* 89])

A 6.4.100: **घसिभसोर्हलि च।** (*ghasibhasor hali ca*)

For example: *gam-atus* > *gm-atus* ... *jagmatus* (3du. pfct.), *han-atus* > ... *jaghnatus*, *jan-e* > *jn-e* > ... *jajñe* (3sg. pfct. mid.), *khan-atus* > ... *cakhnatus*, *ghas-atus* > ... *jakṣatus*, *ghas-ti* (suffix *ktin*: A 3.3.94 [114]) > *ghsti* > ... *gdhi*, *bhas-tām* > *bhs-tām* > ... *babdhām* (3du. imper.); see A 1.1.59, 58 (101-102).

455 The ending *hi* (A 3.4.87 [398]) is replaced by *dhi* after *hu* 'offer oblations' and stems that end with consonants other than semivowels or nasals (*hujhalbhyaḥ*):

A 6.4.101: **हुझल्भ्यो हेर्धिः।** (*hujhalbhyo her dhiḥ*)

After a stem in *-a* (*ataḥ*), as well as one that has a suffix in *-u* (*utaś ca pratyayāt*) not preceded by a consonant cluster (*asaṃyogapūrvāt*), however, zero (*luk*) replaces *hi*:

A 6.4.105: **अतो हेः (लुक्)** (*ato heḥ* [*luk* 104])

A 6.4.106: **उतश्च प्रत्ययादसंयोगपूर्वात्।** (*utaś ca pratyayād asaṃyogapūrvāt*)

Moreover, stem-final *-u* that does not follow a cluster is

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usually subject to optional (*anyatarasyām*) deletion before *m* and *v* (*mvoḥ*), but this deletion is obligatory (*nityam*) for *-u* affixed to *kṛ* (*karoteḥ*), before *y* as well as *m*, *v*:

A 6.4.107: **लोपश्चास्यान्यतरस्यां म्वोः।** (*lopaś cāsyānyatarasyāṁ mvoḥ*)

A 6.4.108: **नित्यङ्करोतेः।** (*nityaṅ karoteḥ*)

A 6.4.109: **ये च।** (*ye ca*)

And the *a* (*ataḥ*) of *kar-u-* is replaced by *u* (*ut*) before a sārvadhātuka affix marked with *k* or *ṅ*:

A 6.4.110: **अत उत्सार्वधातुके (ङिङति)**

(*ata ut sārvadhātuke* [*ṅiti* 98])

For example: *juhudhi* (< ... *hu-hi*), *bhindhi* 'split' (< ... *bhi-na-d-hi*), *paca* 'cook' (< ... *paca-hi*), *sunu* 'press some juice out' (< *su-nu-hi*), *sunu-vas* > *sunvas* / *sunuvas* (1du. pres.), *sunu-mas* > *sunmas* / *sunumas* (1pl. pres.), *kṛ-u-vas* > *kar-u-vas* (A 7.3.84 [127]) > *kur-u-vas* > *kurvas*, *kṛ-u-mas* > ... *kurmas*, *kṛ-u-yāt* (3sg. opt.) > ... *kuryāt*, *kṛ-u-tas* > ... *kurutas* (3du. pres. ind.).

456 Before a sārvadhātuka marked with *k* or *ṅ*, the *a* of *śna* (A 3.1.78 [157]) and *as* 'be' (*śnasoḥ*) is deleted (*allopaḥ*), as in *rundhanti* (3pl. < ... *runadh-jhi*), *santi* (< ... *as-jhi*):

A 6.4.111: **श्नसोरल्लोपः (सार्वधातुके ङिङति)**

(*śnasor allopaḥ* [*sārvadhātuke* 110, *ṅiti* 98])

In the same general contexts, the *-ā* (*ātaḥ*) of a stem with *śnā* (A 3.1.81) or of an abhyasta stem (*śnābhyastayoḥ*: A 6.1.5 [52]) is deleted. However, before a consonant (*hali*), *-ī* substitutes for the *-ā* of such stems, excepting those formed from bases of the ghu class (*aghoḥ*: A 1.1.20 [51]):

A 6.4.112: **श्नाभ्यस्तयोरातः।** (*śnābhyastayor ātaḥ*)

A 6.4.113: **ई हल्यघोः।** (*ī haly aghoḥ*)

For example: *krī-nā-jha* > *krī-nā-jhe* (A 3.4.79 [396]) > *krī-nā-ate* (A 7.1.5 [509]) > *krī-n-ate* > *krīṇate* (A 8.4.2 [570])

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'they buy (3pl. mid.)', *mā-jha* > *mā-jhe* > *mā-a-jhe* (A 3.1.68 [157]) > *mā-jhe* (A 2.4.75 [158]) > *mā-mā-jhe* (A 6.1.10 [382]) > *mi-mā-jhe* (A 7.4.76 [385]) > *mi-mā-ate* > *mimate* 'they measure', *krī-nā-tas* > *krī-nī-tas* > *krīṇītas* (3du. act.), *mā-ta* > *mā-te* > ... *mimīte* (3sg.), *dā-tas* > *dā-a-tas* > *dā-tas* > *dā-dā-tas* > *da-dā-tas* (A 7.4.59 [383]) > *da-d-tas* > *dattas* (A 8.4.55 [578]) 'they two give'.

457 The final sounds of verbs that belong to the ghu class (A 1.1.20 [51]) and of *as* are replaced by *e* (*et*) before *hi* (*hau*: A 3.4.87 [398]); at the same time, an abhyāsa syllable (A 6.1.4 [52]) is replaced by zero (*abhyāsalopaś ca*):

A 6.4.119: **घ्वसोरेद्धावभ्यासलोपश्च।** (*ghvasor ed dhāv abhyāsalopaś ca*)

For example: *as-hi* > *ae-hi* > *e-hi* (A 6.4.111 [456]) > *edhi* (A 6.4.101 [455]), *dā-hi* > ... *dā-dā-hi* > *dehi*.

458 To account for forms of the type *pecatuḥ* 'cooked' (3du. pfct.), *pecuḥ* (3pl. pfct.), Pāṇini provides that *-e-* replaces *-a-* (*ataḥ*) of certain verbs and that the abhyāsa syllable gotten from such bases followed by *liṭ* endings (*liṭi*) marked with *k* is deleted, on condition that *-a-* is flanked by single consonants (*ekahalmadhye* 'between one consonant [on either side]') and the initial consonant of the verb is such as does not undergo replacement in an abhyāsa syllable (*anādeśādeḥ*):

A 6.4.120: **अत एकहल्मध्येऽनादेशादेर्लिटि (एत् अभ्यासलोपश्च)** (*ata ekahalmadhye 'nādeśāder liṭi* [*et abhyāsalopaś ca* 119])

By

A 6.4.121: **थलि च सेटि।** (*thali ca seṭi*)

the same concurrent operations apply if such a verb occurs before *thal* (*thali*) augmented with initial *iṭ* (*seṭi*), as in *pecitha*. The substitution of *e* for *a* and deletion of an abhyāsa syllable apply optionally in the case of specific verbs. For example, by

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A 6.4.125: **फणाञ्च सप्तानाम् (वा एत् अभ्यासलोपश्च)** (*phaṇāñ ca saptānām* [*vā* 124, *et abhyāsalopaś ca* 119])

these apply to the subgroup of seven verbs starting with *phaṇ* (*phaṇām*: 160).

2.7.1.4. Operations on nominal bases, stems and endings.

2.7.1.4.1. Rules outside the section headed by A 6.4.1.

459 A short vowel (*hrasvaḥ*) substitutes for the final vowel of a nominal base (*prātipadikasya*) used in the neuter (*napuṃsake*):

A 1.2.47: **ह्रस्वो नपुंसके प्रातिपदिकस्य।** (*hrasvo napuṃsake prātipadikasya*)

For example: *atiri* '... which has transcended wealth' (< *atirai*: A 2.2.18 [315]). See also 322, 466 (A 1.2.48, 49).

460 Certain replacements apply to particular pronouns used anaphorically (*anvādeśe* 'in speaking of something subsequently'), as provided for in:

A 2.4.32: **इदमोऽन्वादेशेऽशनुदात्तस्तृतीयादौ।** (*idamo'nvādeśe'ś anudāttas tṛtīyādau*)

A 2.4.33: **एतदस्त्रतसोस्त्रतसौ चानुदात्तौ।** (*etadas tratasos tratasau cānudāttau*)

A 2.4.34: **द्वितीयाटौस्स्वेनः।** (*dvitīyāṭaussv enaḥ*)

Low-pitched (*anudāttaḥ*) *aś* (A 1.1.55 [95]) substitutes for *idam* 'this' (*idamaḥ*) before endings of the third and following triplets (*tṛtīyādau*). Low-pitched *aś* also replaces *etad* 'this' (*etadaḥ*) followed by *tra* or *tas* (*tratasoḥ*: A 5.3.7, 10 [349]), and these affixes (*tratasau*) then also have low-pitched vowels (*anudāttau*). Low-pitched *ena* (*enaḥ*) substitutes for *idam* and *etad* before endings of the second triplet, the

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third-triplet ending *ṭā*, and the sixth- and seventh-triplet endings *os* (*ṭaussu*). For example: *asmai* 'to this one (referred to before)', *atra* 'here', *enam* 'this one'.

461 Particular operations apply to some nominal bases that remain after the deletion of nominal endings in first members of compounds (A 2.4.71: see 278, 301, 323). For example, in a dvandva compound (*dvandve*: A 2.2.29 [318]) *ānaṅ* (A 1.1.53 [95]) replaces *-ṛ* (*ṛtaḥ*) of a first component that refers to someone related by virtue of traditional knowledge or birth to the referent of the second component:

A 6.3.25: **आनङृतोद्वन्द्वे (विद्यायोनिसम्बन्धेभ्यः)**

(*ānaṅ ṛto dvandve* [*vidyāyonisambandhebhyaḥ* 23])

E.g.: *hotṛ-potṛ* > *hotān-potṛ* > *hotā-potṛ* (A 8.2.7 [539]) 'Hotṛ and Potṛ priests' (nom.-acc. du. *hotāpotārau*), *mātṛ-pitṛ* >... *mātā-pitṛ* 'mother and father' (*mātāpitarau*). *ānaṅ* also replaces the last sound of the first member of a dvandva compound that consists of deity names (*devatādvandve*), as in *indrā-varuṇa* (*indrāvaruṇau*) 'Indra and Varuṇa', but *ī* substitutes for the *-i* of *agni-* in such a compound if *soma* or *varuṇa* follows, as in *agnīṣomau* 'Agni and Soma', *agnīvaruṇau* 'Agni and Varuṇa':

A 6.3.26: **देवताद्वन्द्वे च।** (*devatādvandve ca*)

A 6.3.27: **ईदग्नेः सोमवरुणयोः।** (*īd agneḥ somavaruṇayoḥ*)

The *n* of the negative particle *naÑ* (*nañaḥ*) is deleted (*nalopaḥ*) before any second member of a compound, but if the latter begins with a vowel (*aci*), it receives the initial augment *nuṭ* after *a* resulting from the deletion (*tasmāt*):

A 6.3.73: **नलोपो नञः।** (*nalopo nañaḥ*)

A 6.3.74: **तस्मान्नुडचि।** (*tasmān nuḍ aci*)

For example: *abrāhmaṇa* (< *na-brāhmaṇa*) 'non-Brāhmaṇa', *anaśva* (< *na-aśva*) 'an animal other than a horse'.

462 According to

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A 6.3.43: घरूपकल्पचेलड्रुवगोत्रमतहतेषु ङ्योऽनेकाचो ह्रस्वः (भाषितपुंस्कात्) (*gharūpakalpaceladbruvagotramatahateṣu ṅyo'nekāco hrasvaḥ* [*bhāṣitapuṁskāt* 34])

a short vowel (*hrasvaḥ*) replaces *-ī* of a component with a feminine affix *ṅī* (*ṅyaḥ*) that follows a nominal which, in the same basic meaning, has a masculine counterpart (*bhāṣitapuṁskāt*), if the item with *ṅī* has more than one vowel (*anekācaḥ*) and occurs before a gha suffix (A 1.1.22 [73]), *-rūpa, -kalpa* (A 5.3.66-67 [356]), *-celaṭ* 'dressed as ...', *-bruva* 'who says ...' (with affix *ac*: A 3.1.134 [290]), *-gotra* 'lineage', *-mata* 'thought', *-hata* struck, killed'; e.g., *brāhmaṇitarā* 'very much a Brāhmaṇa woman', *brāhmaṇicelī* 'a woman who dresses as a Brāhmaṇa woman', *brāhmaṇibruvā* 'one who says she is a Brāhmaṇa woman', with *brāhmaṇi-* (< *brāhmaṇī-*). In the same right contexts, shortening applies optionally (*anyatarasyām*) to a nadī element (*nadyāḥ*: 56) that is residual (*śeṣasya*) with respect to those mentioned in A 6.3.43 --- that is, one that has *ṅī* but is monosyllabic or one that ends in *-ū*--- as well as to a nadī suffix introduced after an item marked with an *u-*, *ṛ-*, or *ḷ-* vowel (*ugitaḥ*):

A 6.3.44: नद्याः शेषस्यान्यतरस्याम्। (*nadyāḥ śeṣasyānyatarasyām*)

A 6.3.45: उगितश्च। (*ugitaś ca*)

For example: *stritarā / strītarā* 'quite a woman', *brahmabandhutarā / brahmabandhūtarā* 'very much a Brāhmaṇa woman in name only', *śreyasitarā / śreyasītarā* 'quite the better one'.

463 The final sound of *mahat-* (*mahataḥ*) 'great' is replaced by *ā* (*āt*) before a coreferential constituent in a compound and before the affix *jātīya* (*samānādhikaraṇajātīyayoḥ*):

A 6.3.46: आन्महतः समानाधिकरणजातीययोः। (*ān mahataḥ samānādhikaraṇajātīyayoḥ*)

For example: *mahādeva* (< ... *mahat-deva*) 'great god, king',

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mahājātīya 'like a great one'. *-ā* substitutes also for the final sounds of *dvi-* 'two' and *aṣṭan-* 'eight' (*dvyaṣṭanaḥ*) before another number word (*saṅkhyāyām*) except in a bahuvrīhi compound and before *aśīti* 'eighty' (*abahuvrīhyaśītyoḥ*).

A 6.3.47: **द्व्यष्टनः सङ्ख्यायामबहुव्रीह्यशीत्योः।**

(*dvyaṣṭanaḥ saṅkhyāyām abahuvrīhyaśītyoḥ*)

In the same contexts, *traya-* (*trayaḥ*) replaces *tri-* 'three' (*treḥ*); and before number words from *catvāriṁśat* 'forty' on (*catvāriṁśatprabhṛtau*), with the exception given in A 6.3.47, all (*sarveṣām*) three number words are optionally (*vibhāṣā*) subject to the operations stated:

A 6.3.48: **त्रेस्त्रयः।** (*tres trayaḥ*)

A 6.3.49: **विभाषा चत्वारिंशत्प्रभृतौ सर्वेषाम्।** (*vibhāṣā catvāriṁśatprabhṛtau sarveṣām*)

For example: *dvāviṁśati* (< *dvi-viṁśati*) 'twenty-two', *aṣṭāviṁśati* (< ... *aṣṭan-*) 'twenty-eight', *trayastriṁśat* (< ... *tri-*) 'thirty-three', *dvācatvāriṁśat / dvicatvāriṁśat* 'forty-two', *aṣṭācatvāriṁśat / aṣṭacatvāriṁśat* 'forty-eight', *trayaścatvāriṁśat / tricatvāriṁśat* 'forty-three'.

464 Before the vowel-initial affixes *iṣṭhan, īyasun* (A 5.3.55, 57 [356]), both *śra* and *jya* alternately replace *praśasya* (*praśasasya*) 'praiseworthy', and *jya* also replaces *vṛddha* (*vṛddhasya*) 'old':

A 5.3.60: **प्रशस्यस्य श्रः।** (*praśasyasya śraḥ*)

A 5.3.61: **ज्य च।** (*jya ca*)

A 5.3.62: **वृद्धस्य च।** (*vṛddhasya ca*)

Thus: *praśasya-iṣṭha* > *śra-iṣṭha* > *śreṣṭha-* (A 6.1.87 [528]), *praśasya-iṣṭha* > *jya-iṣṭha* > *jyeṣṭha*, *vṛddha-iṣṭha* > ... *jyeṣṭha*.

465 Certain taddhita affixes are replaced by zero (*luk*) except in the feminine (*astriyām*), provided that reference is made to many (*bahuṣu*) of what they signify, and the plurality in question has to do only with such an affix meaning (*tenaiva*). According to

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A 2.4.62: तद्राजस्य बहुषु तेनैवास्त्रियाम् (लुक्)

(*tadrājasya bahuṣu tenaivāstriyām* [*luk* 58])

a tadrāja affix (*tadrājasya* : 72) is deleted under these conditions; e.g., *pañcālāḥ* 'Pañcālas', *videhāḥ* 'Videhas' (sg. *vaidehaḥ*). Under the same conditions,

A 2.4.63: यस्कादिभ्यो गोत्रे। (*yaskādibhyo gotre*)

A 2.4.64: यञञोश्च। (*yañañoś ca*)

provide that, after items of the group beginning with *yaska* (*yaskādibhyaḥ*), included in the group that begins with *śiva* (A 4.1.112 [335]), an affix signifying a descendant (*gotre*) is replaced by zero, as are *yañ* and *añ* (*yañañoḥ*). For example, *yāskaḥ* 'offspring of Yaska' contains the affix *aṇ*, but the plural *yaskāḥ* does not; similarly, *gārgyaḥ* 'descendant of Garga', with the suffix *yañ* (A 4.1.105), contrasts with *gargāḥ*.

466 Taddhita affixes are deleted under other conditions also. Thus,

A 5.3.65: विन्मतोर्लुक्। (*vinmator luk*)

provides for zero (*luk*) to replace *vin* and *matup* (A 5.2.94, 5.2.121 [346]) if *iṣṭha* or *iyas* follows (A 5.3.55, 57-58 [356]); e.g., *vasuvat-iṣṭha* > *vasu-iṣṭha* > *vasiṣṭha* (A 6.4.155 [505]) 'most wealthy'.

A derivate such as *aindra* 'dedicated to Indra' is formed by introducing a taddhita affix after a pada that refers to a deity (A 4.2.24 [333]). A dvigu compound like *pañcendrāṇi* 'five Indrāṇis', formed by A 2.1.51 (see 313-314) can be the base of a pada that is to be followed by a taddhita suffix to form a derivate meaning 'dedicated to five Indrāṇis'. However, the derivate to be accounted for is *pañcendra*. Accordingly,

A 4.1.88: द्विगोर्लुगनपत्ये। (*dvigor lug anapatye*)

provides that if a taddhita suffix introduced by a rule of the section which A 4.1.83 (335) heads is linked to a dvigu compound (*dvigoḥ*), it is replaced by zero (*luk*), except for an affix introduced to signify an offspring (*anapatye*). In

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addition, the feminine affix of a term like *indrānī* (> *indrāṇī*) is replaced by zero (*luk*) if a taddhita affix is deleted by A 4.2.88 (*taddhitaluki*):

A 1.2.49: **लुक् तद्धितलुकि।** (*luk taddhitaluki*)

This accounts for a derivate like *pañcendra*, in which the component *-indra* lacks the feminine affix *ṅīṣ* and the augment *ānuk* (A 4.1.49 [271]).

467 A 6.1.68 (404) lets zero replace the ending *su* after consonants and feminine suffixes *ṅī, āp*. In addition, to account for vocative singular forms of the types *rame* 'Ramā', *agne* 'Agni', *vāyo* 'Vāyu', *deva* 'god, lord', *amba* 'mother',

A 6.1.69: **एङ्ह्रस्वात्सम्बुद्धेः।** (*eṅhrasvāt sambuddheḥ*)

provides for deleting the sambuddhi ending *su* (*sambuddheḥ*: A 2.3.49 [68]) after *e, o* or a short vowel (*eṅhrasvāt*): *ramā-s* > *rame-s* (A 7.3.106 [483]) > *rame, agni-s* > *agne-s* (A 7.3.108 [484]) > *agne, vāyu-s* > *vāyo-s* > *vāyo, deva-s* > *deva, ambā-s* > *amba-s* (A 7.3.107 [483]) > *amba*.

2.7.1.4.2. Rules headed by A 6.4.1.

468 The final vowel (A 1.1.52, 1.2.28 [95-96]) of a stem is replaced by a long vowel (*dīrghaḥ*) before *-nām* (*nāmi*), that is, the augmented ending *-ām* (A 7.1.54 [498]):

A 6.4.3: **नामि (दीर्घः)** (*nāmi* [*dīrghaḥ* 6.3.111])

For example: *devānām* (< *deva-nām*) 'gods', *agnīnām* (< *agni-nām*) 'fires', *vāyūnām* (< *vāyu-nām*) 'winds', *kartṝ-ṇām* (< *kartṝ-nām* < *kartṛ-nām*) 'doers, makers'. However, *tisṛ-* 'three' and *catasṛ-* 'four' (A 7.2.99 [486]) do not (*na*) have their final vowel thus replaced (*tisṛṇām, catasṛṇām*):

A 6.4.4: **न तिसृचतसृ।** (*na tisṛcatasṛ*)

On the other hand, the penultimate vowel of a stem in *-n* (*nopadhāyāḥ*) is lengthened before *nām*:

A 6.4.7: **नोपधायाः।** (*nopadhāyāḥ*)

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For example: *pañcan-ām* > *pañcan-nām* (A 7.1.55 [498]) > *pañcān-nām* > *pancānām* (A 8.2.7 [539]).

469 The penultimate vowel of a stem in *-n* also is replaced by a long vowel if a sarvanāmasthāna ending other than a sambuddhi (*sarvanāmasthāne ... asambuddhau* : A 1.1.42-43, 2.3.49 [69, 68]) follows the stem:

A 6.4.8: **सर्वनामस्थाने चासम्बुद्धौ** (*sarvanāmasthāne cāsambuddhau*)

In the same contexts, the vowel preceding penultimate *-n-* of a stem that ends with *-s* and of *mahat-* 'great' (*sāntamahataḥ*) is replaced by a long vowel when the stem has a final cluster (*saṁyogasya*) *-ns, -nt*:

A 6.4.10: **सान्तमहतः संयोगस्य** (*sāntamahataḥ saṁyogasya*)

Further, the penultimate vowels of *ap-* 'water'; of stems with *tṛn* (A 3.2.135 [290]), *tṛc* (A 3.1.133 [248]); and of *svasṛ-* 'sister', *naptṛ-* 'offspring, grandchild', *neṣṭṛ-* 'a ritual officiant', *tvaṣṭṛ-* 'Tvaṣṭṛ', *kṣattṛ-* 'cutter', *hotṛ-*, *potṛ-*, *praśāṣṭṛ-* 'ritual officiants' are replaced by long vowels if a sarvanāmasthāna ending other than a sambuddhi follows the stem:

A 6.4.11: **अप्तृन्तृच्स्वसृनप्तृनेष्टृत्वष्टृक्षत्तृहोतृपोतृ-प्रशास्तॄणाम्** (*aptṛntṛcsvasṛnaptṛneṣṭṛ-tvaṣṭṛkṣattṛhotṛpotṛpraśāstṝṇām*)

For example: *rājan-s* > *rājan* (A 6.1.68 [404]) > *rājān* > *rājā* (A 8.2.7 [539]) 'king (nom. sg.)', *rājan-au* > *rājānau* (nom.-acc. du.), *rājan-as* > *rājānas* (nom. pl.), *chandas-i* > *chandans-i* (A 7.1.72 [488]) > *chandāns-i* > *chandāṁsi* (A 8.3.24 [559]) 'meters' (nom.-acc. pl.), *mahat-au* > *mahant-au* (A 7.1.70 [488]) > *mahāntau*, *ap-as* > *āpas* 'waters', *kartṛ-au* > *kartar-au* (A 7.3.110 [484]) > *kartārau* 'doers, makers'.

The penultimate vowels of stems with *-in* as well as of *-han-* 'slayer', *pūṣan-* 'Pūṣan', and *aryaman-* 'Aryaman' are lengthened if the stems occur before *śi* (*śau*: A 7.1.20 [493]).

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This also applies before *su* (*sau*) that is not classed as sambuddhi; and in this context the penultimate *-a-* of a stem with final *-atu* or *-as* (*atvasantasya*), provided it is not a verb (*adhātoḥ*), also is lengthened:

A 6.4.12: **इन्हन्पूषार्यम्णां शौ।** (*inhanpūṣāryamṇāṁ śau*)

A 6.4.13: **सौ च।** (*sau ca*)

A 6.4.14: **अत्वसन्तस्य चाधातोः।** (*atvasantasya cādhātoḥ*)

For example: *bahudaṇḍin-i* > *bahudaṇḍīni* 'which have many staffs', *vṛtrahan-s* > *vṛtrahan* (A 6.1.68 [404]) > *vṛtrahān* > *vṛtrahā* (A 8.2.7 [539]) 'slayer of Vṛtra', *pūṣan-s* > ... *pūṣā*, *gomat-s* (affix *matup*: A 5.2.94 [346]) > *gomat* > *gomāt* > *gomānt* (A 7.1.70) > *gomān* (A 8.2.23 [542]) 'one who has many cows', *suyaśas-s* > *suyaśas* > *suyaśās* 'one who has good fame'.

470 To account for forms like *asthnā* (instr. sg.) 'bone', the *-i* of *asthi-* 'bone', *dadhi-* 'curds', *sakthi-* 'thigh', *akṣi-* 'eye' is replaced by *anaṅ* (A 1.1.53 [95]), with a high-pitched vowel (*udāttaḥ*), before vowel-initial endings of triplets starting with the third:

A 7.1.75: **अस्थिदधिसक्थ्यक्ष्णामनङुदात्तः (अचि विभक्तौ तृतीयादिषु)** (*asthidadhisakthyakṣṇām anaṅ udāttaḥ* [*aci vibhaktau* 73, *tṛtīyadiṣu* 74])

E.g.: *asthi-ā* > *asthan-ā* > *asthnā* (A 6.4.134 [502]), *dadhi-ā* > ... *dadhnā*.

471 Before *su*, the *-v* of *div-* 'heaven' is replaced by *au* (*aut*):

A 7.1.84: **दिव औत् (सौ)** (*diva aut* [*sau* 82])

div-s > *diau-s* > *dyaus* (A 6.1.77 [125]). Also before *su*, provided this is not classed as sambuddhi, *anaṅ* replaces the final sounds of *sakhi-* 'friend', of stems in *-ṛ*, and of *uśanas-* 'Uśanas', *purudaṁsas-* 'much-skilled', *anehas-* 'sinless':

A 7.1.93: **अनङ् सौ (सख्युरसम्बुद्धौ)** (*anaṅ sau* [*sakhyur asambuddhau* 92])

A 7.1.94: **ऋदुशनस्पुरुदंसोनेहसाञ्च।**

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(*ṛduśanaspurudaṁsonehasāṁ ca*)

For example: *sakhi-s* > *sakhan-s* > *sakhan* > *sakhān* > *sakhā*, *piṭṛ-s* > *pitan-s* > ... *pitā* 'father'; cf. *rājā* < ... *rājan-s* (469).

472 The stems *pathin-* 'way', *mathin-* 'churning utensil', *ṛbhukṣin-* 'Ṛbhukṣin' are subject to certain replacements before sarvanāmasthāna endings, as provided for in

A 7.1.85: **पथिमथ्यृभुक्षामात् (सौ)** (*pathimathyṛbhukṣām āt* [*sau* 82])

A 7.1.86: **इतोऽत्सर्वनामस्थाने।** (*ito't sarvanāmasthāne*)

A 7.1.87: **थोऽन्थः।** (*tho'nthaḥ*)

Before any sarvanāmasthāna ending, *-a-* (*at*) substitutes for *-i-* (*itaḥ*), and *-nth-* (*nthaḥ*) replaces *-th-* (*thaḥ*) of these stems; e.g., *pathin-au* > *panthin-au* > *panthan-au* > *panthānau* (A 6.4.8 [469]). In addition, before *su* (*sau*) in particular, *ā* (*āt*) replaces the *-n* of the stems; e.g., *pathin-s* > *pathiā-s* > ... *panthās*. On the other hand, when these stems precede vowel-initial endings, so that they are classed as bha (*bhasya*: A 1.4.18 [75]), that segment which begins with their last vowels (*ṭeḥ*: A 1.1.64 [41]) is replaced by zero (*lopaḥ*):

A 7.1.88: **भस्य टेर्लोपः।** (*bhasya ṭer lopaḥ*)

E.g., *pathin-ā* > *pathā* (instr. sg.).

473 The *-s* of *pums-* 'man, male' is replaced by *asuṅ* (A 1.1.53 [95]) when a sarvanāmasthāna ending follows:

A 7.1.89: **पुंसोऽसुङ् (सर्वनामस्थाने)** (*puṁso'suṅ* [*sarvanāmasthāne* 86])

E.g., *pums-au* > *pumas-au* > *pumans-au* (A 7.1.70 [488]) > *pumāns-au* (A 6.4.10 [469]) > *pumāṁsau* (A 8.3.24 [559]).

474 Before an ending (*vibhaktau*: A 1.4.104 [65, 67]), the *-n* of *aṣṭan-* 'eight' (*aṣṭanaḥ*) is replaced by *ā*, which also substitutes for the *-ai* of *rai-* 'wealth' (*rāyaḥ*) before the consonant (*hali*) of an ending:

A 7.2.84: **अष्टन आ विभक्तौ।** (*aṣṭana ā vibhaktau*)

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A 7.2.85: रायो हलि। (*rāyo hali*)

For example: *aṣṭan-bhis* > *aṣṭaābhis* > *aṣṭābhis* (A 6.1.101 [532]), *rai-bhyām* > *rābhyām*.

475 A 7.3.110 (484) lets guṇa replacement apply to stem-final *-ṛ* before a sarvanāmsthāna ending. The nominative plurals *tisras* 'three' and *catasras* 'four, however, have *-r* instead of *-ar*. Accordingly, Pāṇini provides that the *-ṛ* (*ṛtaḥ*) of *tisṛ-* 'three', *catasṛ-* 'four' (A 7.2.99 [486]) is replaced by *-r* (*raḥ*) before the vowel (*aci*) of an ending:

A 7.2.100: अचि र ऋतः (तिसृचतसृ) (*aci ra ṛtaḥ* [*tisṛcatasṛ* 99])

476 The set of items that begins with *sarva* (*sarvādīni*) and whose members are given the class name *sarvanāman* (A 1.1.27 [53]), includes a subset that begins with *tyad* 'that'. Before any ending, the final sounds of these stems (*tyadādīnām*) are generally replaced by *-a* (*aḥ*), and before *su* (*sau*), non-final (*anantyayoḥ*) *t* and *d* (*tadoḥ*) of these items are replaced by *s* (*saḥ*):

A 7.2.102: त्यदादीनामः। (*tyadādīnām aḥ*)

A 7.2.106: तदोः सः सावनन्त्ययोः। (*tadoḥ saḥ sāv anantyayoḥ*)

For example: *tyad-s* > *syad-s* > *syaa-s* > *syas* (A 6.1.97 [531]), *tad-s* >... *sas* 'that one', *tyad-am* > *tyaa-am* > *tya-am* > *tyam* (A 6.1.107 [533]).

477 Particular rules are required to account for forms of other pronominals in the group that begins with *tyad*. One of these sūtras concerns *adas-* 'that':

A 7.2.107: अदस औ सुलोपश्च। (*adasa au sulopaś ca*)

If *adas-* occurs before *su*, its *-s* is replaced by *au* and the ending *su* is concomittantly deleted (*sulopaḥ*): *adas-s* > *adaau* > *asaau* (A 7.2.106 [476]) > *asau* (A 6.1.88 [529]) 'that one' (nom. sg. m.).

A group of rules concerns *idam-* 'this':

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A 7.2.108: **इदमो मः।** (*idamo maḥ*)

A 7.2.109: **दश्च।** (*daś ca*)

A 7.2.110: **यः सौ।** (*yaḥ sau*)

A 7.2.111: **इदोऽय् पुंसि।** (*ido'y puṁsi*)

A 7.2.112: **अनाप्यकः।** (*an āpy akaḥ*)

A 7.2.113: **हलि लोपः।** (*hali lopaḥ*)

To preclude the substitution of *-a* for the *-m* of this stem (A 7.2.102 [476]), A 7.2.108 lets *-m* itself be a replacement for *-m* when *idam-* occurs before *su*. *-m-* also substitutes for the *-d-* (*daḥ*) of *idam-* before endings in general, but before *su* in particular, this sound is replaced by *y* (*yaḥ*). On the other hand, if *idam-* used in the masculine (*puṁsi*) occurs with *su*, its segment *id* (*idaḥ*) is replaced by *ay*. The segment *id* of *idam-* is subject to two other substitutions, provided the pronominal stem does not contain a *k* by virtue of having the affix *ak* (*akaḥ*: A 5.3.71 [354]): Before endings from *ā* (instr. sg.) through *sup* (*āpi*: see figure B [67]), *an* replaces this segment, and *id* is deleted before a consonant (*hali*) of an ending. For example: *idam-s* > *idam* (A 6.1.68 [404]) > ... *iyam* 'this one' (nom. sg. fem.), *idam-s* > *idam* > ... *ayam* (nom. sg. masc.), *idam-au* > *imam-au* > *imaa-au* (A 7.2.102 [476]) > *ima-au* (A 6.1.97 [531]) > *imau* (A 6.1.88 [529]) 'these two' (nom. du. masc.), *idam-ā* > *anam-ā* > *anaa-ā* > *ana-ā* > *ana-ina* (A 7.1.12 [492]) > *anena* (A 6.1.87 [528]) 'this one' (instr. sg. masc.-nt.), *idam-bhyām* > *am-bhyām* > *aa-bhyām* > *a-bhyām* > *ābhyām* (A 7.3.102 [482]) 'these two' (instr.-dat.-abl. du. masc.-nt.)

478 Two other members of the group that begins with *tyad*, the second- and first-person pronoun stems *yuṣmad-*, *asmad-* (*yuṣmadasmadoḥ*), are subject to particular substitutions before endings which do not themselves undergo replacement (*anādeśe*). By

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A 7.2.86: **युष्मदस्मदोरनादेशे(आ विभक्तौ हलि)** (*yuṣmadasmador anādeśe* [*ā vibhaktau* 84, *hali* 85])

A 7.2.89: **योऽचि।** (*yo'ci*)

-d of these stems is replaced by *-ā* before consonant-initial endings, by *-y* before the vowel (*aci*) of an ending; e.g., *yuṣmad-bhis* > *yuṣmaā-bhis* > *yuṣmābhis* (A 6.1.101 [532]), *asmad-bhis* >... *asmābhis, yuṣmad-ā* > *tvaad-ā* (A 7.2.97 [see below]) > *tvad-ā* (A 6.1.97 [531]) > *tvayā, asmad-ā* >... *mayā*. In addition, as provided for by

A 7.2.87: **द्वितीयायाञ्च।** (*dvitīyāyāñ ca*)

A 7.2.88: **प्रथमायाश्च द्विवचने भाषायाम्।** (*prathamāyāś ca dvivacane bhāṣāyām*)

-ā replaces *-d* before endings of particular triplets, even if the endings undergo substitution: second-triplet endings (*dvitīyāyām*), the dvivacana ending (*dvivacane*: A 1.4.103 [67]) of the first triplet (*prathāmāyāḥ*), in the non-Vedic language (*bhāṣāyām*). For example: *yuṣmad-am* > *tvaad-am* (A 7.2.97) > *tvad-am* (A 6.1.97) > *tvaā-am* > *tvā-am* (A 6.1.101) > *tvām* (A 6.1.107 [533]), *asmad-am* > *maad-am* (A 7.2.97) >... *mām, yuṣmad-auṭ* > *yuṣmad-am* (A 7.1.28 [496]) > *yuvaad-am* (A 7.2.92 [see below]) > *yuvad-am* > *yuvaā-am* > ... *yuvām, asmad-auṭ* > *asmad-am* > *āvaad-am* (A 7.2.92) > *āvad-am* > *āvaā-am* >... *āvām, yuṣmad-au* > *yuṣmad-am* > *yuvaad-am* > *yuvad-am* > *yuvaā-am* >... *yuvām* (Vedic nom. du. *yuvam*).

In contexts which constitute a remainder (*śeṣe*) with respect to those covered by prior sūtras --- that is, where substitution by neither *-ā* nor *-y* has been provided for --- zero (*lopaḥ*) replaces the *-d* of *yuṣmad-* and *asmad-*:

A 7.2.90: **शेषे लोपः।** (*śeṣe lopaḥ*)

For example: *yuṣmad-s* > *yuṣmad-am* (A 7.1.28) > *ahaad-am* (A 7.2.94 [see below]) > *ahad-am* (A 6.1.97) > *aha-am* > *aham* (A 6.1.107), *yuṣmad-s* > *yuṣmad-am* > *tvaad-am* > ... *tvam*.

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In certain contexts, the part of *yuṣmad-* or *asmad-* that ends with *-m* (*maparyantasya*) is replaced. The sūtras which let such substitution take effect, stated under the heading of

A 7.2.91: **मपर्यन्तस्य।** (*maparyantasya*)

are as follows:

A 7.2.92: **युवावौ द्विवचने।** (*yuvāvau dvivacane*)

A 7.2.93: **यूयवयौ जसि।** (*yūyavayau jasi*)

A 7.2.94: **त्वाहौ सौ।** (*tvāhau sau*)

A 7.2.95: **तुभ्यमह्यौ ङयि।** (*tubhyamahyau ṅayi*)

A 7.2.96: **तवममौ ङसि।** (*tavamamau ṅasi*)

A 7.2.97: **त्वमावेकवचने।** (*tvamāv ekavacane*)

A 7.2.98: **प्रत्ययोत्तरपदयोश्च।** (*pratyayottarapadayoś ca*)

In the dual (*dvivacane*), the segments *yuṣm-*, *asm-* are respectively replaced by *yuva-*, *āva* (*yuvāvau*). Before *jas* (*jasi*), *yūya-* and *vaya-* (*yūyavayau*) substitute for *yuṣm-* and *asm-*. *tva-* and *aha-* (*tvāhau*) replace *yuṣm-* and *asm-* of the stems if *su* follows (*sau*). Before *ṅe* (*ṇayi*) the replacements are *tubhya-*, *mahya-* (*tubhyamahyau*); and *tava-*, *mama-* occur as substitutes if the stems precede *ṅas* (*ṇasi*). Thus: *yuṣmad-au* > ... *yuvām, asmad-au* > ... *āvām*; *yuṣmad-as* > *yuṣmad-am* (A 7.1.28) > *yūyaad-am* > *yūyad-am* (A 6.1.97) > *yūya-am* (A 7.2.90) > *yūyam* (A 6.1.107), *asmad-as* > *asmad-am* > *vayaad-am* > ... *vayam*; *yuṣmad-s* > *yuṣmad-am* > *tvaad-am* > ... *tvam*; *asmad-s* > ... *aham*; *yuṣmad-e* > *yuṣmad-am* (A 7.1.28) > *tubhyaad-am* > *tubhyad-am* (A 6.1.97) > *tubhya-am* (A 7.2.90) > ... *tubhyam, asmad-e* > *asmad-am* > ... *mahyam*; *yuṣmad-as* > *yuṣmad-a* (A 7.1.27) > *tavaad-a* > *tavad-a* (A 6.1.97) > *tava-a* > *tava*; *asmad-as* > *asmad-a* > *mamaad-a* >... *mama*. In singular (*ekavacane*) forms other than those for which particular replacements are stated, *tva-* and *ma-* (*tvamau*) respectively substitute for *yuṣm-* and *asm-*; e.g., *yuṣmad-am* > *tvaad-am* > ... *tvām, asmad-am* > ... *mām*.

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Moreover, such replacement in the singular applies also to *yuṣmad-*, *asmad-* before an affix other than a vibhakti and before a subsequent member of a compound (*pratyayottarapadayoḥ*); e.g., *yuṣmad-īya-* (A 4.2.114, 1.1.74 [343, 61]) > *tvaad-īya* > *tvadīya-*'pertaining to you', *asmad-īya* > ... *madīya-*'pertaining to me', *yuṣmad-putra* (A 2.2.8 [301]) > ... *tvatputra-*'your son', *asmad-putra* > ... *matputra*'my son'.

479 The final vowel of a stem is replaced by a vṛddhi vowel before an affix marked with *ñ* or *ṇ* (A 7.2.115 [417]); e.g., *go-s* > *gaus* (A 7.1.90 [511]) 'cow, ox'. Taddhita affixes (A 4.1.76 [70]) with such markers condition particular operations on their stems. The first vowel (*acām ādeḥ*) of a stem is replaced by a vṛddhi vowel (*vṛddhiḥ*: A 1.1.1 [9]) before a taddhita affix that is marked not only withwith *ñ* or *ṇ*, but also with *k*.(*kiti ca*):

A 7.2.117: **तद्धितेष्वचामादेः (वृद्धिः ञ्णिति)**

(*taddhiteṣv acām ādeḥ* [*vṛddhiḥ* 114, *ñṇiti* 115])

A 7.2.118: **किति च।** (*kiti ca*)

For example: *garga-ya-* (affix *yañ*: A 4.1.92,105 [331, 335]) > *garg-ya* (A 6.4.148 [504]) > *gārgya-*, *upagu-a-* (affix *aṇ* : A 4.1.83,92) > *upago-a* (A 6.4.146) > *aupago-a* > *aupagava* (A 6.1.78 [524]), *naḍa-āyana* (*phak*: A 4.1.92, 99) > *naḍ-āyana* > *nāḍāyana*.

480 A 7.2.117-118 are only general rules, and others are needed to account for particular derivates. For example, if vṛddhi substitution by A 7.2.117 were allowed to take effect in *vyākaraṇa-a, svaśva-a* (affix *aṇ*: A 4.2.59, 4.1.112 [337, 335]), one would derive **vyākaraṇa* and **svāśva* instead of the required derivates *vaiyākaraṇa, sauvaśva*. Accordingly,

A 7.3.3: **न य्वाभ्याम्पदान्ताभ्याम्पूर्वौ तु ताभ्यामैच्।** (*na yvābhyām padāntābhyām pūrvau tu tābhyām aic*)

provides, contrary to A 7.2.117-118, that vṛddhi substitution does not (*na*) apply to vowels that follow pada-final (*padāntābhyām*) *y* and *v* (*yvābhyām*); instead (*tu*'but'), the vowels *ai* and *au* (*aic*), respectively, are introduced before

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(*pūrvau*) *y* and *v*.

In addition, some sūtras provide that the first vowel of a subsequent member of a compound (*uttarapadasya*: A 7.3.10 [111]) is replaced by a vṛddhi vowel if the stem to which the compound member belongs occurs before a taddhita marked with *ñ*, *ṇ*, or *k*. For example, according to

A 7.3.11: **अवयवाद्ऋतोः।** (*avayavād ṛtoḥ*)

this substitution applies to a season name (*ṛtoḥ*) that follows a term denoting a part (*avayavāt*); e.g., *pūrvavarṣā-ika* (affix *ṭhak*: A 4.3.18 [344]) > ... *pūrvavārṣika* 'born during the first part of the rain season'.

481 A vowel *a* (*ataḥ*) that precedes (*pūrvasya*) *k* of an affix (*pratyayasthāt kāt*) is replaced by *i* (*it*) if a feminine suffix *āp* (*āpi*) follows, provided the feminine affix was introduced after a nominal base and not after a term that originally contained a nominal ending (*asupaḥ*):

A 7.3.44: **प्रत्ययस्थात्कात्पूर्वस्यातइदाप्यसुपः।**

(*pratyayasthāt kāt pūrvasyāta id āpy asupaḥ*)

For example: *kār-akā* (suffixes *ṇvul*, *ṭāp*: A 3.1.133, 4.1.4 [248, 271]) > *kārikā*.

482 *-a* of a stem is replaced by a long vowel *-ā* not only under the conditions given in A 7.3.101 (425) but also (*ca*) before a nominal ending (*supi*) that begins with one of the sounds denoted by the abbreviation *yañ*:

A 7.3.102: **सुपि च।** (*supi ca*)

If, however, the ending that follows the stem in *-a* is one of the bahuvacana set (*bahuvacane*: A 1.4.103 [67]) and it begins with a sound denoted by *jhal* (*jhali*), then *-e* (*et*) replaces the stem-final vowel:

A 7.3.103: **बहुवचने झल्येत्।** (*bahuvacane jhaly et*)

For example: *deva-ya* > *devāya* 'god, lord' (dat. sg.), *deva-bhyām* > *devābhyām* (instr.-dat.-abl. du.), *deva-bhyas* > *devebhyas* (dat.-abl. pl.), *deva-su* > *deve-su* > *deveṣu* (loc.pl.: A 8.3.59 [563]).

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In addition, *-a* of a stem is replaced by *-e* before the genitive dual ending *os* (*osi*) and the homophonous locative dual ending, as in *devayos*: *deva-os* > *deve-os* > *devayos* (A 6.1.78 [524]):

A 7.3.104: **ओसि च।** (*osi ca*)

483 The *-ā* of a stem with a feminine affix *āp* (*āpaḥ*) also undergoes substitution by *-e*, before the instrumental singular ending *ā* (*āṅi*: see 86):

A 7.3.105: **आङि चापः।** (*āṅi cāpaḥ*)

For example: *khaṭvā-ā* > *khaṭve-ā* > *khaṭvayā* 'bed'. Moreover, this replacement applies before the sambuddhi ending *su* (*sambuddhau*: A 2.3.49 [68]):

A 7.3.106: **सम्बुद्धौ च।** (*sambuddhau ca*)

For example: *ramā-s* > *rame-s* > *rame* (A 6.1.69 [467]) 'Ramā'.

On the other hand, the final long vowels of terms with the meaning of *ambā* 'mother' and stems with *nadī* elements (*ambārthanadyoḥ*: 56) are replaced by short vowels (*hrasvaḥ*) before the sambuddhi ending:

A 7.3.107: **अम्बार्थनद्योर्ह्रस्वः।** (*ambārthanadyor hrasvaḥ*)

For example: *ambā-s* > *amba-s* > *amba* (A 6.1.69), *kumārī-s* > ... *kumāri* 'maiden'.

484 Final vowels of stems are replaced by guṇa vowels (A 1.1.2 [9]) in particular contexts. According to

A 7.3.108: **ह्रस्वस्य गुणः (सम्बुद्धौ)** (*hrasvasya guṇaḥ* [*sambuddhau* 106])

A 7.3.109: **जसि च।** (*jasi ca*)

guṇa substitution applies to stems with a final short vowel (*hrasvasya*) *i* or *u*, not only before the sambuddhi ending *su* but also (*ca*) before *jas* (*jasi*). For example: *agni-s* > *agne-s* > *agne* (A 6.1.69 [467]), *vāyu-s* > *vāyo-s* > *vāyo*, *agni-as* > *agne-as* > *agnayas* (A 6.1.78 [524]), *vāyu-as* > *vāyo-as* > *vāyavas*. A stem in *-ṛ* (*ṛtaḥ*) undergoes guṇa replacement in more contexts, before *ṅi* and sarvanāmasthāna

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endings (*ṅisarvanāmasthānayoḥ*: A 1.1.42-43 [69]):

A 7.3.110: **ऋतो ङिसर्वनामस्थानयोः।** (*ṛto ṅisarvanāmasthānayoḥ*)

Further, guṇa substitution applies to stems of the ghi class (*gheḥ*: A 1.4.7 [57]) before endings marked with *ṅi* (*ṅiti*):

A 7.3.111: **घेर्ङिति।** (*gher ṅiti*)

For example: *pitṛ-i* > *pitari, pitṛ-au* > *pitarau, pitṛ-as* (ending *jas*) > *pitaras, pitṛ-am* > *pitaram, agni-e* (ending *ṅe*) > *agne-e* > *agnaye* (A 6.1.78), *agni-as* (*ṅasi, ṅas*) > *agne-as* > *agnes* (A 6.1.110 [533]).

485 The final vowel of a stem is replaced by a long vowel (*dīrghaḥ*) before *cvi* (A 5.4.50 [347]), and a stem-final *a*-vowel (*asya*) is replaced by *-ī* before *cvi* and *kyac* (A 5.4.50, 3.1.8,10 [347, 283]):

A 7.4.26: **च्वौ च (दीर्घः)** (*cvau ca* [*dīrghaḥ* 25])

A 7.4.32: **अस्य च्वौ (ई)** (*asya cvau* [*ī* 31])

A 7.4.33: **क्यचि च।** (*kyaci ca*)

For example: *paṭu-v* > *paṭu* (A 6.1.67 [409]) > *paṭū* (*paṭū karoti* 'makes sharp'), *śukla-v* > ... *śuklī, putra-ya* > *putrīya*.

486 The stems *tri-* 'three' and *catur-* 'four' (*tricaturoḥ*) are replaced (A 1.1.55 [95]) by *tiṣṛ-* and *catasṛ-* in the feminine (*striyām*):

A 7.2.99: **त्रिचतुरोः स्त्रियां तिसृचतसृ।** (*tricaturoḥ striyāṁ tisṛcatasṛ*)

For example: *tri-as* > *tiṣṛ-as* > *tisras* (A 7.2.100 [475]), *catur-as* > *catasṛ-as* > *catasras*.

traya- (*trayaḥ*) substitutes for the entire stem *tri-* 'three' (*treḥ*) before *-ām* (*āmi*):

A 7.1.53: **त्रेस्त्रयः (आमि)** (*tres trayaḥ* [*āmi* 52])

tri-ām > *traya-ām* > *traya-nām* (A 7.1.54 [498]) > *trayā-nām* (A 6.4.3 [468]) > *trayāṇām* (A 8.4.2 [570]). In the feminine, however, replacement by *tiṣṛ-* takes effect: *tiṣṛṇām* (A 6.4.4

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[468]).

487 *ka-* (*kaḥ*) substitutes for *kim-* (*kimaḥ*) before vibhaktis in general, but before a *t-* or *h-* (*tihoḥ*) of a vibhakti, *kim* is replaced by *ku-*, and before the particular suffix *ati* (*ati*: A 5.3.12 [349]) the substitute for *kim-* is *kva-*:

A 7.2.103: **किमः कः।** (*kimaḥ kaḥ*)

A 7.2.104: **कु तिहोः।** (*ku tihoḥ*)

A 7.2.105: **क्वाति।** (*kvāti*)

For example: *kim-s* > *ka-s* (nom. sg. masc.), *kim-tra* (affix *tral*: A 5.3.10) > *kutra*, *kim-a* > *kva-a* > *kva* (A 6.4.148 [504]).

488 A non-verbal stem (*adhātoḥ*) marked with an *u-*, *ṛ-*, or *ḷ-* vowel as well as a stem in *-añc-* (*ugidacām*) receives the augment *num* (A 1.1.47 [16-17]) when it is followed by a sarvanāmasthāna affix (A 1.1.42- 43 [69]):

A 7.1.70: **उगिदचांसर्वनामस्थानेऽधातोः (नुम्)**

(*ugidacāṁ sarvanāmasthāne'dhātoḥ* [*num* 58])

For example: *bhavat-am* (base *bhavatu* 'you') > *bhavantam* (acc. sg. masc.), *pacat-am* (stem *pacat*- with suffix *śatṛ*: A 3.2.124, 126 [262]) > *pacantam*. *yuj*- 'one who yokes' (*yujeḥ*) receives the same augment in the same contexts, provided it does not occur in a compound (*asamāse*):

A 7.1.71: **युजेरसमासे।** (*yujer asamāse*)

E.g.: *yuñjau, yuñjas,* but *aśvayujau, aśvayujas* 'ones who yoke horses'.

A neuter (*napuṁsakasya*) stem that ends in vowel or a consonant other than a nasal or semivowel (*jhalacaḥ*) receives the augment *num* before sarvanāmasthāna endings (A 1.1.42-43 [69]), and a neuter stem that ends in *i-*, *u-*, *ṛ-*, or *ḷ-*vowels (*ikaḥ*) gets this augment before any vowel-initial ending (*aci vibhaktau*):

A 7.1.72: **नपुंसकस्य झलचः (सर्वनामस्थाने)**

(*napuṁsakasya jhalacaḥ* [*sarvanāmasthāne* 70])

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A 7.1.73: **इकोऽचि विभक्तौ।** (*iko'ci vibhaktau*)

For example: *chandas-i* › *chandans-i* › *chandāns-i* (A 6.4.10 [469]) › *chandāṁsi* (A 8.3.24 [559]) 'meters (nom.-acc. pl.)', *phala-i* › *phalan-i* › *phalāni* (A 6.4.8 [469]) 'fruits', *vāri-e* (dat. sg.) › *vārin-e* › *vāriṇe* (A 8.4.2 [570]) 'water'.

489 If a stem ends in ***śatṛ*** (*śatuḥ*) following an abhyasta element (*abhyastāt*: A 6.1.5 [52]), it generally does not (*na*) receive the augment ***num***, contrary to A 7.1.70, 72 (488):

A 7.1.78: **नाभ्यस्ताच्छतुः।** (*nābhyastāc chatuḥ*)

However, the augment is optionally (*vā*) added if the stem in question is neuter (*napuṁsakasya*) or has ***śatṛ*** following a stem in *-a, -ā* and followed by ***śī*** (A 7.1.19 [493]) or a nadī (56) element (*śīnadyoḥ*):

A 7.1.79: **वा नपुंसकस्य।** (*vā napuṁsakasya*)

A 7.1.80: **आच्छीनद्योर्नुम्।** (*āc chīnadyor num*)

Under the conditions given in A 7.1.80, ***num*** is obligatorily (*nityam*) added to a stem with ***śatṛ*** if this affix is used with stems that contain ***śap*** or ***śyan*** (*śapśyanoḥ*: A 3.1.68-69 [157]):

A 7.1.81: **शप्श्यनोर्नित्यम्।** (*śapśyanor nityam*)

For example: *dadat-s* › *dadat* (A 6.1.68 [404]) 'giving' (nom. sg. masc.), *dadat-i* › *dadanti* / *dadati* (nom.-acc. pl. nt.), *tudat-ī* › *tudantī* / *tudatī* 'shoving, goading, wounding' (nom.-acc. du. nt.), *tudat-ī* (affix ***ṅīp***: A 4.1.6 [271]) › *tudantī* / *tudatī* (nom. sg. fem.) *pacat-ī* › *pacantī* 'cooking', *pacatī* › *pacantī*, *dīvyat-ī* › *dīvyantī* 'gambling', *dīvyat-ī* › *dīvyantī*.

490 The stems *catur-* 'four' and *anaḍuh-* 'ox, bullock' (*caturanaḍuhoḥ*) receive the augment ***ām***, which is high-pitched (*udāttaḥ*), when there follows a sarvanāmasthāna ending other than the sambuddhi ending ***su***, before which these stems get the augment ***am***. In addition, ***num*** is added to *anaḍuh-* when ***su*** follows:

A 7.1.98: **चतुरनडुहोरामुदात्तः (सर्वनामस्थाने)**

(*caturanaḍuhor ām udāttaḥ* [*sarvanāmasthāne* 86])

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A 7.1.99: **अम्सम्बुद्धौ।** (*am sambuddhau*)

A 7.1.82: **सावनडुहः (नुम्)** (*sāv anaḍuhaḥ* [*num* 80])

For example: *catur-as* (nom. pl. masc.) > *catuār-as* > *catvāras* (A 6.1.77 [125]), *anaḍuh-s* (voc.sg.) > *anaḍuh* (A 6.1.68 [404]) > *anaḍuah* > *anaḍuanh* > *anaḍvanh* > *anaḍvan* (A 8.2.23 [542]), *anaḍuh-s* (nom. sg.) > *anaḍuh* > *anaḍuāh* > *anaḍuānh* > ... *anaḍvāṁ*, *anaḍuh-au* > *anaḍuāh-au* > *anaḍvāhau*.

491 The suffix *ktvā* (*ktvaḥ*: A 3.4.21 [259]) is replaced by *lyap* in a compound (*samāse*) other than one in which the prior constituent is *nañ* (*anañpūrve*):

A 7.1.37: **समासेऽनञ्पूर्वे क्त्वो ल्यप्।** (*samāse'nañpūrve ktvo lyap*)

For example: *prakṛtvā* (A 2.2.18 [315]) > *prakṛya* > *prakṛtya* (A 6.1.71 [394]) 'after setting ... forth', but *akṛtvā* 'after not doing'.

492 The following sūtras state replacements for nominal endings after stems in *-a* (*ataḥ*):

A 7.1.9: **अतो भिस ऐस्।** (*ato bhisa ais*)

A 7.1.12: **टाङसिङसामिनात्स्याः।** (*ṭāṅasiṅasām inātsyāḥ*)

A 7.1.13: **ङेर्यः।** (*ṅer yaḥ*)

A 7.1.14: **सर्वनाम्नः स्मै।** (*sarvanāmnaḥ smai*)

A 7.1.15: **ङसिङ्योः स्मात्स्मिनौ।** (*ṅasiṅyoḥ smātsminau*)

A 7.1.16: **पूर्वादिभ्यो नवभ्यो वा।** (*pūrvādibhyo navabhyo vā*)

A 7.1.17: **जसः शी।** (*jasaḥ śī*)

The first three rules concern *-a*-stems in general. After these, *ais* replaces *bhis*; *ina*, *āt*, and *sya*, respectively, substitute for *ṭā*, *ṅasi*, *ṅas*; and *ṅe* is replaced by *ya*; e.g.: *deva-bhis* > *deva-ais* > *devais* (A 6.1.88 [529]), *deva-ā* > *deva-ina* > *devena* (A 6.1.87 [528]), *deva-as* > *deva-āt* > *devāt* (A 6.1.101 [532]), *deva-as* > *devasya*, *deva-e* > *deva-ya* >

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devāya (A 7.3.102 [482]). The next four sūtras deal with substitutes for endings that follow pronominal (*sarvanāmnaḥ*: 53) stems in *-a*. After such stems, *smai* replaces *ṅe; smāt* and *smin* respectively substitute for *ṅasi* and *ṅi,* but only optionally (*vā*) after the nine (*navabhyaḥ*) items of the subgroup that begins with *pūrva* 'prior, eastern' (*pūrvādibhyaḥ*: see 205); and *jas* is replaced by *śī*. For example: *sarva-e* > *sarvasmai* (dat. sg. masc.-nt.), *sarva-as* > *sarvasmāt* (abl. sg. masc.-nt.), *sarva-i* > *sarvasmin, pūrva-as* > ... *pūrvāt / pūrvasmāt, pūrva-i* > ... *pūrve / pūrvasmin, sarva-as* > *sarva-ī* > *sarve* (A 6.1.87).

493 Following a stem that ends with a feminine suffix *āp* (*āpaḥ*), the dual endings *au* (*auṅaḥ*: see 86) are replaced by *śī*. The same replacement applies also (*ca*) after a neuter (*napuṁsakāt*) stem, following which *śi* substitutes for *jas* and *śas*:

A 7.1.18: **औङ आपः (शी)** (*auṅa āpaḥ* [*śī* 17])

A 7.1.19: **नपुंसकाच्च।** (*napuṁsakāc ca*)

A 7.1.20: **जश्शसोः शिः।** (*jaśśasoḥ śiḥ*)

For example: *khaṭvā-au* > *khaṭvā-ī* > *khaṭve* (A 6.1.87 [528]) 'beds', *phala-au* > *phala-ī* > *phale* 'fruits', *dadhi-au* > *dadhi-ī* > *dadhinī* (A 7.1.73 [488]) 'two portions of curds', *phala-as* > *phala-i* > *phalan-i* (A 7.1.72) > *phalāni* (A 6.4.8 [469]).

494 The endings *jas śas* are replaced by *auś* (A 1.1.55 [95]) after *aṣṭā-* (< *aṣṭan-*: A 7.2.84 [474]), by zero (*luk*) after stems of the ṣaṣ class (*ṣaḍbhyaḥ*: A 1.1.24-25 [60]):

A 7.1.21: **अष्टाभ्य औश् (जश्शसोः)** (*aṣṭābhya auś* [*jaśśasoḥ* 20])

A 7.1.22: **षड्भ्यो लुक्।** (*ṣaḍbhyo luk*)

For example: *aṣṭā-as* > *aṣṭā-au* > *aṣṭau* (A 6.1.88 [529]), *pañcan-as* > *pañcan* > *pañca* (A 8.2.7 [539]) 'five'.

495 Endings other than *au jas śas* (A 7.1.19-20 [493]) also are subject to substitution after neuter stems, as provided for in

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A 7.1.23: स्वमोर्नपुंसकात् (लुक्) (*svamor napuṁsakāt* [*luk* 22])

A7.1.24: अतोऽम् (*ato'm*)

A7.1.25: अद्ड् डतरादिभ्यः पञ्चभ्यः। (*adḍ ḍatarādibhyaḥ pañcabhyaḥ*)

Zero (*luk*) replaces *su* and *am* (*svamoḥ*) after a neuter stem (*napuṁsakāt*) in general. If the stem ends in *-a* (*ataḥ*), however, these endings are replaced by *am*. And *adḍ* substitutes for *su* and *am* after five (*pañcabhyaḥ*) groups of stems, starting with those that contain the affix *ḍatara* (*ḍatarādibhyaḥ*), included in the set that begins with *sarva* (A 1.1.27 [53]). For example: *dadhi-s* > *dadhi* 'curds', *madhu-s* > *madhu* 'honey', *phala-s* > *phala-am* > *phalam* (A 6.1.107 [533]) 'fruit', *katara-s* > *katara-ad* > *katarad* (A 6.4.143 [503]) 'which of two?'.

496 Special substitutions apply to endings after the personal pronouns *yuṣmad-* and *asmad-* (*yuṣmadasmadbhyām*), which themselves are subject to particular replacements (see 478):

A 7.1.27: युष्मदस्मद्भ्यां ङसोऽश् (*yuṣmadasmadbhyāṁ ṅaso'ś*)

A 7.1.28: ङेप्रथमयोरम् (*ṅeprathamayor am*)

A 7.1.29: शसो न (*śaso na*)

A 7.1.30: भ्यसो भ्यम् (*bhyaso bhyam*)

A 7.1.31: पञ्चम्या अत् (*pañcamyā at*)

A 7.1.32: एकवचनस्य च (*ekavacanasya ca*)

A 7.1.33: साम आकम् (*sāma ākam*)

let the following replacements take effect: *aś* (A 1.1.55 [95]) for *ṅas* (*ṅasaḥ*), *am* for *ṅe* and endings of the first two triplets (*ṅeprathamayoḥ*), *n* for the *a-* of *śas* (*śasaḥ*: A 1.1.54), *bhyam* for *bhyas* of the fourth triplet, *at* for *bhyas* of the fifth triplet (*pañcamyāḥ*) as well as for the ekavacana

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ending (*ekavacanasya*) *ñasi* of this triplet, and *ākam* for *sām* (*sāmaḥ*). For example: *yuṣmad-as* > *yuṣmad-a* > ... *tava*, *yuṣmad-e* > *yuṣmad-am* >... *tubhyam*, *yuṣmad-s* > *yuṣmad-am* > ... *tvam*, *yuṣmad-as* > *yuṣmaā-as* > *yuṣmā-as* (A 6.1.101 [532]) > *yuṣmā-ns* > *yuṣmān* (A 8.2.23 [542]), *yuṣmad-bhyas* > *yuṣmad-bhyam* > *yuṣmabhyam*, *yuṣmad-bhyas* > *yuṣmad-at* > *yuṣma-at* > *yuṣmat* (A 6.1.97 [531]), *yuṣmad-as* > *yuṣmad-at* > ... *tvat*, *yuṣmad-ām* > *yuṣmaa-ām* > *yuṣma-ām* (A 6.1.97) *yuṣma-sām* (A 7.1.52 [498]) > *yuṣma-ākam* > *yuṣmākam* (A 6.1.101).

497 The ending *ñi* undergoes replacements after particular stems, as provided for in

A 7.3.116: ङेराम्नद्याम्नीभ्यः। (*ṅer ām nadyāmnībhyaḥ*)

A 7.3.117: इदुद्भ्याम्। (*idudbhyām*)

A 7.3.118: औत्। (*aut*)

A 7.3.119: अच्च घेः। (*ac ca gheḥ*)

A 7.3.120: आङो नास्त्रियाम्। (*āṅo nāstriyām*)

After stems of the nadī class (56), including those with short *-i -u* (*idudbhyām*), stems with feminine suffixes *āp*, and stems with *-nī-* 'leader' (*nadyāmnībhyaḥ*), *ām* occurs instead of *ñi* (*ṅeḥ*), which is replaced by *au* (*aut*) after other stems with *-i -u*. In addition, if the stem belongs to the ghi class (*gheḥ*: 57), the substitution of *au* for *ñi* is accompanied by the replacement of the stem-final vowel by *a* (*at*). For example: *kumārī-i* > *kumārī-ām* > *kumārī-āām* (A 7.3.112 [499]) > *kumārī-ām* (A 6.1.90 [529]) > *kumāryām* (A 6.1.77 [125]) 'maiden', *khaṭvā-i* > *khaṭvā-ām* > *khaṭvā-yāām* (A 7.3.113 [499]) > *khaṭvāyām* (A 6.1.101 [532]) 'bed', *kṛti-i* > *kṛti-ām* > *kṛti-āām* > ... *kṛtyām* 'doing, deed', *dhenu-i* > *dhenu-ām* >... *dhenvām* 'cow', *pati-i* > *pati-au* > *patyau* 'husband, master', *agni-i* > *agna-au* > *agnau* (A 6.1.88 [529]) 'fire, Agni', *vāyu-i* > *vāya-au* > *vāyau* 'wind, Vāyu', *kṛti-i* > *kṛta-au* > *kṛtau*, *dhenu-i* > *dhena-au* > *dhenau*. Moreover, after a stem of the ghi class,

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the instrumental singular ending *ā* (*āṭaḥ*: see 86) is replaced by *nā* except in feminine (*astriyām* 'non-feminine') forms; e.g., *agni-ā* > *agninā*, *vāyu-ā* > *vāyunā*.

498 The ending *ām* (*āmi*) receives the initial augment *suṭ* (A 1.1.46 [17]) after a pronominal (*sarvanāmnaḥ*: 53) that ends in an *a*-vowel:

A 7.1.52: **आमि सर्वनाम्नः सुट् (आत्)** (*āmi sarvanāmnaḥ suṭ* [*āt* 50])

After non-pronominal stems that end with a short vowel, stems of the nadī class (56), and stems with feminine affixes *āp* (*hrasvanadyāpaḥ*), as also after members of the ṣaṣ group (60) and *catur-* 'four' (*ṣaṭcaturbhyaḥ*), the initial augment *nuṭ* is added to *ām*:

A 7.1.54: **ह्रस्वनद्यापो नुट्।** (*hrasvanadyāpo nuṭ*)

A 7.1.55: **षट्चतुर्भ्यश्च।** (*ṣaṭcaturbhyaś ca*)

For example: *sarva-ām* (gen. pl.) > *sarva-sām* > *sarve-sām* (A 7.3.103 [482]) > *sarveṣām* (A 8.3.59 [563]), *deva-ām* > *deva-nām* > *devānām* (A 6.4.3 [468]), *agni-ām* > *agni-nām* > *agnīnām*, *vāyu-ām* > *vāyu-nām* > *vāyūnām*, *pitṛ-ām* > *pitṛ-nām* > *pitṝ-nām* > *pitṝṇām* (A 8.4.1 [570]) 'fathers, ancestors', *kumārī-ām* > *kumārī-nām* > *kumārīṇām* (A 8.4.2), *khaṭvā-ām* > *khaṭvānām*, *pañcan-ām* > *pañcan-nām* > *pañcān-nām* (A 6.4.7 [468]) > *pañcānām* (A 8.2.7 [539]) 'five', *catur-ām* > *catur-nām* > *caturṇām*.

499 Endings marked with *ṅi* receive the initial augment *āṭ* after a stem of the nadī group (*nadyāḥ*), *yāṭ* after one that ends with a feminine affix *ā* (*āpaḥ*). However, if the stem with such a feminine affix is pronominal (*sarvanāmnaḥ*), two operations apply simultaneously: The ending is augmented with *syāṭ* and the final vowel of the stem is replaced by a short one (*hrasvaḥ*). These operations apply optionally (*vibhāṣā*) after *dvitīyā-* 'second' and *ṭṛtīyā-* 'third' (*dvitīyāṭṛtīyābhyām*):

A 7.3.112: **आण्नद्याः (ङिति)** (*āṇ nadyāḥ* [*ṅiti* 111])

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A 7.3.113: याडापः। (*yāḍ āpaḥ*)

A 7.3.114: सर्वनाम्नः स्याड् ढ्रस्वश्च। (*sarvanāmnaḥ syāḍ ḍhrasvaś ca*)

A 7.3.115: विभाषा द्वितीयातृतीयाभ्याम्। (*vibhāṣā dvitīyātṛtīyābhyām*)

For example: *kumārī-e* (ending *ṅe*) > *kumārī-āe* > *kumārī-ai* (A 6.1.90 [529]) > *kumāryai* (A 6.1.77 [125]), *khaṭvā-e* > *khaṭvā-yāe* > *khaṭvāyai* (A 6.1.88 [529]), *sarvā-e* > *sarva-syāe* > *sarvasyai*, *dvitīyā-e* > *dvitīya-syāe* > *dvitīyasyai*, *dvitīyā-e* > *dvitīyā-yāe* > *dvitīyāyai*.

2.7.1.4.3. Rules headed by A 6.4.22.

500 As I did earlier (Section 2.7.1.3.3) in connection with operations relative to verbal stems, I shall consider here also, in connection with operations relative to nominal stems, a selection of sūtras, stated in the section which A 6.4.22 heads, whose operations are treated as suspended with respect to each other.

Most of the operations in question concern bha stems and are accordingly stated under the heading of A 6.4.129 (111), but the following do not have to do with such stems:

A 6.4.79: स्त्रियाः (अचि इयङ्) (*striyāḥ* [*aci iyaṅ* 77])

A 6.4.80: वाम्शसोः। (*vāmśasoḥ*)

These have to do with *strī-* 'woman, female' (*striyāḥ*) before vowel-initial affixes. The *-ī* of this stem is replaced by *iyaṅ* before a vowel-initial suffix, though only optionally (*vā*) before the endings *am* and *śas*. For example: *strī-au* > *striyau* (nom.-acc. du.), *strī-am* > *striyam* (acc. sg.), *strī-am* > *strīm* (A 6.1.107 [533]), *strī-as* > *striyas* (acc. pl.), *strī-as* > *strīs* (A 6.1.102 [532]).

501 Certain bha stems are subject to samprasāraṇa substitution (A 1.1.45 [38]), as provided for in:

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A 6.4.131: **वसोः सम्प्रसारणम्।** (*vasoḥ samprasāraṇam*)

A 6.4.132: **वाह ऊठ्।** (*vāha ūṭh*)

A 6.4.133: **श्वयुवमघोनामतद्धिते।** (*śvayuvamaghonām ataddhite*)

This replacement applies to: a stem with a suffix *vasu* (*vasoḥ*); one with *-vāh*, in which case the samprasāraṇa substitute is *ūṭh*; *śvan-* 'dog', *yuvan-* 'young person', *maghavan-* 'Indra' (*śvayuvamaghonām*), provided the affix which follows is not a taddhita (*ataddhite*). For example: *sedvas-as* (acc. pl., abl.-gen. sg.; affix *kvasu*: A 3.2.108 [232]) > *seduas-as* > *sedus-as* (A 6.1.108 [533]) > *seduṣas* (A 8.3.59 [563]), *viśvavāh-as* > *viśvauāh-as* > *viśvaūh-as* > *viśvauhas* (A 6.1.89 [529]) 'all-transporting', *śvan-as* > *śuan-as* > *śunas*, *yuvan-as* > *yuuan-as* > *yuun-as* > *yūnas* (A 6.1.101 [532]), *maghavan-as* > *maghauan-as* > *maghaün-as* > *maghonas* (A 6.1.87 [528]).

502 The *-a-* of a bha stem in *-an* (*anaḥ*) is generally deleted (*allopaḥ*):

A 6.4.134: **अल्लोपोऽनः।** (*allopo'naḥ*)

However, this deletion takes place only optionally (*vibhāṣā*) if the stem is followed by *ñi* or *śī* (*ṇiśyoḥ*), and it does not (*na*) apply if *-an* follows a cluster (*saṁyogāt*) that ends with *v* or *m* (*vamantāt*):

A 6.4.136: **विभाषा ङिश्योः।** (*vibhāṣā ṅiśyoḥ*)

A 6.4.137: **न संयोगाद्वमन्तात्।** (*na saṁyogād vamantāt*)

For example: *rājan-as* (endings *śas, ñasi, ñas*) > *rājn-as* > *rājñas* (A 8.4.40 [574]) 'king' (acc. pl., abl.-gen. sg.), *rājan-i* > (optionally) *rājn-i* > *rājñi*, *sāman-ī* (A 7.1.19 [493]) > (optionally) *sāmnī* 'two sāmans', *parvan-ā* > *parvaṇā* (A 8.4.2 [570]) 'joint, section, chapter', *carman-ā* > *carmaṇā* 'skin, hide'.

503 The *-ā* (*ātaḥ*) of a bha stem is deleted, if this sound is part of a verb (*dhātoḥ*):

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A 6.4.140: **आतो धातोः (लोपः)** (*āto dhātoḥ* [*lopaḥ* 134])

For example: *viśvapā-as* > *viśvapaṣ* 'all protecting'. Further, that part of a bha that begins with its last vowel (*ṭeḥ*: A 1.1.64 [41]) is dropped before an affix marked with *ḍ* (*ḍiti*):

A 6.4.143: **टेः (डिति लोपः)** (*ṭeḥ* [*ḍiti* 142, *lopaḥ* 134])

For example: *katara-ad* (A 7.1.25 [495]) > *katarad*.

504 Particular substitutions apply to bha stems before taddhita affixes. Thus, according to

A 6.4.144: **नस्तद्धिते (टेः लोपः)** (*nas taddhite* [*ṭeḥ* 143, *lopaḥ* 134])

a bha stem in *-n* (*naḥ*) has that part of it which begins with its last vowel (*ṭeḥ*: A 1.1.64 [41]) dropped before a taddhita affix (*taddhite*), as in *ādhyātma*: *-ātman-a* (affix *ṭac*: A 5.4.108 [363]) > *-ātma*. On the other hand, a bha stem that ends in *-u* (*oḥ*) regularly has its final vowel replaced by the guṇa vowel (*guṇaḥ*) before a taddhita affix:

A 6.4.146: **ओर्गुणः** (*or guṇaḥ*)

For example: *upagu-a* (affix *aṇ*: A 4.1.83 [331, 335]) > *upago-a* > *aupago-a* (A 7.2.117 [479]) > *aupagava* (A 6.1.78 [524]).

A final *i*-or *a*-vowel (*yasya*) of a bha stem is deleted not only before a taddhita suffix but also (*ca*) when *ī* follows (*īti*):

A 6.4.148: **यस्येति च (लोपः)** (*yasyeti ca* [*lopaḥ* 147])

For example: *dakṣa-i* (affix *iñ*: A 4.1.95 [332]) > *dakṣ-i* > *dākṣi*, *gaura-ī* (affix *ṅīṣ*: A 4.1.41 [271]) > *gaurī*.

505 The taddhita affixes *iṣṭha*, *imanic*, and *īyasun* (*iṣṭha-meyassu*: A 5.1.122, 5.3.55-58 [348, 356]) in particular are contexts for a series of operations. Before these suffixes, that part of a bha stem that begins with its last vowel (*ṭeḥ*: A 1.1.64 [41]) is deleted, as in *laghiṣṭha* 'exceedingly light, brief' (< *laghu-iṣṭha*), *laghiman* 'lightness, brevity' (< *laghu-iman*), *laghīyas* 'lighter, briefer' (*laghu-īyas*):

A 6.4.155: **टेः (इष्ठेमेयस्सु लोपः)** (*ṭeḥ*

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[*iṣṭhemeyassu* 154, *lopaḥ* 147])

As provided for in

A 6.4.156: **स्थूलदूरयुवह्रस्वक्षिप्रक्षुद्राणां यणादिपरम्पूर्वस्य च गुणः।** (*sthūladūrayuvahrasvakṣipra-kṣudrāṇāṁ yaṇādiparam pūrvasya ca guṇaḥ*)

when *sthūla-* 'thick, stout', *dūra-* 'far', *yuvan-* 'young', *hrasva-* 'short', *kṣipra-* 'quick', *kṣudra-* 'small' are followed by these affixes, that part of the stem that begins with its last semivowel (*yaṇādiparam*) is deleted, and a guṇa vowel (*guṇaḥ*) substitutes for the vowel that precedes (*pūrvasya*); e.g., *sthūla-iṣṭha* > *stho-iṣṭha* > *sthaviṣṭha* (A 6.1.78 [524]), *dūra-iṣṭha* > *do-iṣṭha* > *daviṣṭha, yuvan-iṣṭha* > *yo-iṣṭha* > *yaviṣṭha, hrasva-iṣṭha* > *hrasiṣṭha, kṣipra-iṣṭha* > *kṣepiṣṭha, kṣudra-iṣṭha* > *kṣodiṣṭha*. In addition, *pra-, stha-, spha-, var-, baṁhi-, gar-, varṣi-, trap-, drāghi-*; and *vṛnda-*, respectively, replace *priya-* 'dear' (e.g., *priya-iṣṭha* > *pra-iṣṭha* > *preṣṭha*: A 6.1.87 [528]), *sthira-* 'stable, firm' (*stheṣṭha*), *sphira-* 'abundant' (*spheṣṭha*), *uru-* 'broad' (*variṣṭha*), *bahula-* 'multiple' (*baṁhiṣṭha*), *guru-* 'weighty, heavy' (*gariṣṭha*), *vṛddha-* 'grown, aged' (*varṣiṣṭha*), *tṛpra-* 'pleased' (*trapiṣṭha*), *dīrgha-* 'long' (*drāghiṣṭha*), *vṛndāraka-* 'great, eminent' (*vṛndiṣṭha*) before *iṣṭha, iman,* and *īyas*:

A 6.4.157: **प्रियस्थिरस्फिरोरुबहुलगुरुवृद्धतृप्रदीर्घवृन्दारकाणाम्प्रस्थस्फवर्बंहिगर्वर्षिन्त्रद्राघिवृन्दाः।** (*priyasthirasphirorubahulaguruvṛddha-tṛpradīrghavṛndārakāṇām prasthasphavar-baṁhigarvarṣitrabdrāghivṛndāḥ*)

In the same contexts, *r* replaces *ṛ* (*ṛtaḥ*) of a stem that begins with a consonant (*halādeḥ*), provided *ṛ* is a light vowel (*laghoḥ*):

A 6.4.161: **र ऋतो हलादेर्लघोः।** (*ra ṛto halāder laghoḥ*)

For example: *pṛthu-iṣṭha* > *prathu-iṣṭha* > *prathiṣṭha* (A 6.4.155) 'exceedingly broad, broadest', *pṛthu-iman* >... *prathi-*

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man 'breadth'. On the other hand, as provided for in

A 6.4.163: **प्रकृत्यैकाच्।** (*prakṛtyaikāc*)

a monosyllabic item (*ekāc*) retains its original form (*prakṛtyā* 'in the original') before *iṣṭha, iman, īyas*. For example, *sraj-iṣṭha* (< *sraj-vin-iṣṭha*: A 5.3.65 [466]) does not undergo deletion by A 6.4.155 to give **sriṣṭha*.

506 The suffixes *iṣṭha, iman,* and *īyas* themselves undergo certain operations after particular stems, according to

A 6.4.158: **बहोर्लोपो भू च बहोः।** (*bahor lopo bhū ca bahoḥ*)

A 6.4.159: **इष्ठस्य यिट् च।** (*iṣṭhasya yiṭ ca*)

A 6.4.160: **ज्यादादीयसः।** (*jyād ād īyasaḥ*)

After *bahu-* (*bahoḥ*) 'much, many', the initial sounds (A 1.1.54 [95]) of *iman, īyas* are replaced by zero, with concurrent substitution of *bhū-* for *bahu-* (*bhū ca bahoḥ*); *bhū-* also replaces *bahu-* before *iṣṭha,* which receives the initial augment *y* (*yiṭ*) after the stem; and the *ī*-of *īyas* is replaced by *ā* (*āt*) after *jya-* (< *praśasya-, vṛddha-*: A 5.3.61-62 [464]): *bahu-īyas* > *bhūyas, bahu-iman* > *bhūman, bahu-iṣṭha* > *bhūyiṣṭha, jya-īyas* > *jyā-āyas* > *jyāyas* (A 6.1.101 [532]).

2.7.1.5. Replacement of entire padas.

507 A group of sūtras provides for replacing forms of the second- and first-person pronouns *yuṣmad, asmad* (*yuṣmada-smadoḥ*) with terms that are wholly low-pitched (*anudāttaṃ sarvam*: A 8.1.18 [615]):

A 8.1.20: **युष्मदस्मदोःषष्ठीचतुर्थीद्वितीयास्थयोर्वांनावौ।** (*yuṣmadasmadoḥ ṣaṣṭhīcaturthīdvitīyāsthayor vāṁnāvau*)

A 8.1.21: **बहुवचनस्य वस्नसौ।** (*bahuvacanasya vasnasau*)

A 8.1.22: **तेमयावेकवचनस्य।** (*temayāv ekavacanasya*)

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A 8.1.23: त्वामौ द्वितीयायाः। (*tvāmau dvitīyāyāḥ*)

The rules concern *yuṣmad* and *asmad* together with endings of the sixth, fourth, and second triplets (*ṣaṣṭhīcaturthīdvitīyāsthayoḥ*). If the endings in the padas are those of the bahuvacana set (*bahuvacanasya*), then the padas are replaced by *vas* and *nas* (*vasnasau*); if the endings are those of the ekavacana set, the substitutes are *te* and *me* (*temayau*); but *tvā, mā* replace padas in which *yuṣmad, asmad* are followed in particular by ekavacana endings of the second triplet (*dvitīyāyāḥ*). Otherwise, *vas* (2du.) and *nas* (1du.) substitute for padas consisting of *yuṣmad, asmad* and the endings noted.

508 A 8.1.20–23 concern padas that follow other padas (A 8.1.16–17 [105, 111]). If the padas that contain *yuṣmad, asmad* are syntactically connected (*-yukte*) with certain items, the replacements provided for do not (*na*) apply. For example, according to

A 8.1.24: नचवाहाहैवयुक्ते। (*na cavāhāhaivayukte*)

these substitutions do not take effect for padas connected with *ca* 'and, also' *vā* 'or', *ha* 'indeed (implying possible censure or command)', *aha* 'indeed (implying possible censure, praise or command)', *eva* 'only' (also emphatic). For example,

(113) ग्रामस्तव च स्वम्। (*grāmas tava 'ca svam*) 'The village is also your possession.'

(114) ग्रामस्तुभ्यञ्च दीयते। (*grāmas tubhyañ ca dīyate*) 'The village is given to you also.'

contain the padas *tava* (< ... *yuṣmad-as*: 478, 496), *tubhyam* (< ... *yuṣmad-e*), and *te* is not allowed in place of these. On the other hand, replacement by one of the substitutes noted is optional (*vibhāṣā*) for padas that follow a term with a first-triplet ending (*prathamāyāḥ*), if this has another pada before it (*sapūrvāyāḥ*):

A 8.1.26: सपूर्वायाः प्रथमाया विभाषा। (*sapūrvāyāḥ prathamāyā vibhāṣā*)

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For example:

(115) ग्रामे कम्बलस्ते दीयते। (*grāme kambalas te dīyate*)

'A blanket is being given to you in the village.'

where *tubhyam* can alternate with *te*.

2.7.1.6. Replacement of cover symbols.

509 The basic verb endings *jhi, jha* (A 3.4.78 [232, 64]) contain a segment *jh,* which does not occur in any actual ending; instead, one has *-anti, -ati, -anta, -ata,* and so on. Similarly, *yu* and *vu* of affixes like *lyu* (A 3.1.134 [290]), *lyuṭ* (A 3.3.115 [291]), *ṇvul* (A 3.1.133 [248]), *ṣvun* (A 3.1.145 [290]) are not found in actual usage, where one has instead *-ana-* and *-aka-*. As can be seen from these examples, these segments are like markers used with various items (see 88), except that, instead of being deleted, they are replaced by other elements. The following sūtras serve to replace segments of affixes after their stems (A 6.4.1 [105]):

A 7.1.1: युवोरनाकौ। (*yuvor anākau*)

A 7.1.2: आयनेयीनीयियःफढखच्छघाम्प्रत्ययादीनाम्। (*āyaneyīnīyiyaḥ phaḍhakhacchaghām pratyayādīnām*)

A 7.1.3: झोऽन्तः। (*jho'ntaḥ*)

A 7.1.4: अदभ्यस्तात्। (*ad abhyastāt*)

A 7.1.5: आत्मनेपदेष्वनतः। (*ātmanepadeṣv anataḥ*)

A 7.3.50: ठस्येकः। (*ṭhasyekaḥ*)

A 7.3.51: इसुसुक्तान्तात्कः। (*isusuktāntāt kaḥ*)

According to A 7.1.1, *ana* and *aka* (*anākau*), respectively, substitute for *yu* and *vu* (*yuvoḥ*). A 7.1.2 provides that affix-initial (*pratyayādīnām*) *ph ḍh kh ch gh* are respectively replaced by *āyan ey īn īy iy*; e.g., *pha* (as in *phak*: A 4.1.99 [335]) > *āyana, ḍha* (as in *ḍhak*: A 4.2.33 [336]) > *eya, kha* (A

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4.2.93 [344]) > *īna, cha* (A 5.1.1 [338]) > *īya, gha* (A 4.2.93) > *iya*. The next three sūtras concern *jh*(*jhaḥ*) of verb endings. In general, this is replaced by *ant*(*antaḥ*), but *at* substitutes for *jh* after an abhyasta stem (*abhyastāt*: A 6.1.5-6 [52]) and in ātmanepada endings (*ātmanepadeṣu*), except after a stem in *-a* (*anataḥ*). For example, *bhavanti* 'they are' (< ... *bhū-jhi*), *adanti* 'they are eating' (< ... *ad-jhi*), *dīvyanti* 'they are gambling' (< ... *dīv-jhi*), *sunvanti* 'they are pressing juice out' (< ... *su-jhi*), *rundhanti* 'they are hemming in' (< ... *rudh-jhi*), *tanvanti* 'they are stretching' (< ... *tan-jhi*), *krīṇanti* 'they are buying' (< ... *krī-jhi*) have *-anti* instead of *-jhi*, and *aidhanta* 'they thrived' (< ... *edh-jha*), *apacanta* 'they cooked' (< ... *pac-jha*) have *-anta* instead of *-jha*, but *juhvati* 'they are offering oblations' (< ... *hu-jhi*) has *-ati* for *-jhi*, and *āsata* 'they sat' (< ... *ās-jha*), *akrīṇata* 'they bought' (< ... *krī-jha*) have *-ati* and *-ata* for *-jhi* and *-jha*. According to A 7.3.50-51, *ṭh*(*ṭhasya*) is replaced by *ik*(*ikaḥ*) unless the stem preceding it ends with *is, us,* a vowel denoted by the abbreviation *uk* (129), or *t* (*isusuktāntāt*). For example, *lākṣika* 'dyed with lac' (< ... *lakṣā-ṭhak*: A 4.2.2 [336]) has *-ika*, but *sārpiṣka* 'one who sells butter' (<... *sarpis-ṭhak*: A 4.4.52 [339]) has *-ka*.

510 According to A 7.1.5, *-at* replaces *jh* in *-jhe* (< *-jha*: A 3.4.79 [396]) after *śī-*; but the actual form to be accounted for is *śerate* 'they are lying down, sleeping'; similarly, one has *aśerata* (3pl. impfct.). Hence,

A 7.1.6: शीङो रुट् (*śīṅo ruṭ*)

provides that the initial augment *ruṭ* is added to *-at* gotten from *-jh* if the ending in question follows *śīñ* (*śīñaḥ*).

2.7.1.7. Imposition of markings.

511 None of the sarvanāmasthāna endings *su au jas am auṭ* is marked with *ñ* or *ṅ*, so that, without something else being done, these endings could not be contexts for vṛddhi substitution according to A 7.2.115 (417). There are, however,

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forms such as *gauḥ* (nom. sg.), *gāvau* (nom.-acc. du.), *gāvaḥ* (nom. pl.), from bases in *-o* (*go* 'cow, ox'). Accordingly, Pāṇini provides, by

A 7.1.90: **ओतो णित्।** (*oto ṇit,* see 521)

that a sarvanāmasthāna ending (*sarvanāmasthāne* : A 7.1.86 [472]) is marked with *ṇ* (*ṇit*) if it follows a stem that ends with *-o* (*otaḥ*). The endings so marked condition vṛddhi substitution in their stems: *go-s* > *gau-s, go-au* > *gau-au* > *gāvau* (A 6.1.78 [524]), *go-as* > *gau-as* > *gāvas*. Similarly,

A 7.1.92: **सख्युरसम्बुद्धौ।** (*sakhyur asambuddau*)

lets a sarvanāmasthāna ending be marked with *ṇ* if it follows the stem *sakhi-* (*sakhyuḥ*) 'friend', unless this is used in addressing a friend, that is, unless *su* is a sambuddhi ending (*asambuddhau*: A 2.3.49 [68]): *sakhi-au* > *sakhai-au* > *sakhāyau, sakhi-as* > *sakhai-as* > *sakhāyas, sakhi-am* > ... *sakhāyam* (but voc. sg. *sakhe*).

Conversely, although the uttama ending *ṇal* (< *mip* : A 3.4.82 [397]) is marked with *ṇ*, it does not obligatorily condition vṛddhi replacement by A 7.2.115-116: first-person forms such as *cakāra* 'made, did', *papāca* 'cooked' alternate with *cakara, papaca*. Therefore,

A 7.1.91: **णलुत्तमो वा।** (*ṇal uttamo vā*)

provides that the uttama ending (*uttamaḥ*) *ṇal* is optionally (*vā*) marked with *ṇ*.

512 There is another series of sūtras which let certain verbal affixes that are not regularly marked with *ṅ* or *k* be so marked and provide that some affixes regularly marked with *k* are not so marked under stated conditions. The effect of such rules is to allow or disallow guṇa- and vṛddhi-vowel replacements (A 1.1.5 [98]) for elements which precede the affixes in question and to allow other operations conditioned by suffixes marked with *ṅ, k*.

513 The following rules provide that particular affixes are marked with *ṅ* (*ṅit*):

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A 1.2.1: **गाङ्कुटादिभ्योऽञ्णिन्ङित्।** (*gāṅkuṭādibhyo' ñṇin ṅit*)

A 1.2.2: **विज इट्।** (*vija iṭ*)

A 1.2.3: **विभाषोर्णोः।** (*vibhāṣorṇoḥ*)

A 1.2.4: **सार्वधातुकमपित्।** (*sārvadhātukam apit*)

By A 1.2.1, an affix not marked with *ñ* or *ṇ* (*añṇit*) is marked with *ṅ* if it follows *gāṅ* (A 2.4.49-51 [380]) and verbs of the subgroup that begins with *kúṭā* (*gāṅkuṭādibhyaḥ*: see 164). For example, *adhyagīṣṭa* 'studied, learned' (< ... *gā-s-ta*) has *-gī-* instead of *-gā-*; accounted for by imposing the marker *ṅ* on *sic*, thereby letting *-ī* replace the *-ā* of *gā* before this suffix (A 6.4.66 [451]). *kuṭitum* contains the verb stem form *kuṭ-*, without guṇa-vowel replacement (A 7.3.86 [127]) con- ditioned by the suffix *tumun* (augmented *itum*); although the affix is not originally marked with *ṅ*, this marking is imposed on it to preclude guṇa replacement in *kuṭ-* and so on.

A 1.2.2-3 concern affixes that are not marked with *ñ* or *ṇ* but are augmented with initial *iṭ*. Such an affix is marked with *ṅ* after *vij* 'shake, fear', and has this marking optionally (*vibhāṣā*) after *ūrṇu* 'cover'; e.g., *udvijitum* (inf.), *ūrṇaviṭṛ* (< *ūrṇo-iṭṛ*: affix *ṭṛc* (A 3.1.133 [248]), *ūrṇuviṭṛ* (< *ūrṇu-iṭṛ*: A 6.4.77 [452]).

A 1.2.4 provides that a sārvadhātuka (*sārvadhātukam*: 63) not marked with *p* (*apit*) is marked with *ṅ*. For example, the suffixes *śnu, śa, śnā* (A 3.1.73, 77, 81 [157]) are marked with *ś* to show that they belong to the sārvadhātuka class. They are not marked with *p*, so that, by A 1.2.4, *ṅ* marking is imposed on them. This accounts for their not conditioning guṇa-vowel substitution (A 7.3.84, 86) in their stems: *sunoti, tudati, krīṇāti*. The endings *tas, anti* (< *jhi*: A 7.1.3 [509]) also have marking with *ṅ* imposed on them, so that they too do not condition guṇa replacement: *sunutas, sunvanti* (< *sunu-anti*: A 6.4.87 [452]), *tudatas, tudanti* (< *tuda-anti*: A 6.1.97 [531]). In addition, *tas, anti* are marked with *ṅ* to show that they con-

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dition replacement of *-ā* by *-ī* and zero (A 6.4.112-113 [456]): *krīṇītas, krīṇanti*. Since they are marked with *ñ*, the endings *tas* and *anti* also do not condition vṛddhi replacement in *mṛj-* (A 7.2.114 [415]): *mṛṣṭaḥ* (< ... *mṛj-tas*), *mṛjanti*.

514 According to

A 1.2.5: असंयोगाल्लिट् कित् (अपित्) (*asaṁyogāl liṭ kit* [*apit* 4])

a *liṭ* ending (A 3.4.81-82 [396-397]) not marked with *p* is marked with *k* (*kit*) when it follows an item that does not end with a consonant cluster (*asaṁyogāt*). For example, the endings *ṇal thal ṇal* replace *tip sip mip*, which are marked with *p*, so that they too have this marking (A 1.1.56 [100]), hence are not marked with *k*. These endings thereby are contexts for vṛddhi substitution --- optional in the case of the uttama ending *ṇal* (A 7.1.91 [511]) --- and substitution by guṇa vowels, as in *cakāra, cakartha, cakāra / cakara* 'made, did', *bibheda, bibheditha, bibheda* 'split'. Other *liṭ* endings, however, substitute for basic endings that are not marked with *p*. These endings have marking with *k* imposed on them, so that they do not condition guṇa-vowel substitution: *bibhidatus, bibhidus, bibhide, bibhidāte, bibhidre*. In addition, they are contexts for samaprasāraṇa substitution in particular stems (A 6.1.15-17 [388]); e.g., *yaj-atus* > ... > *ij-atus* > *ij-ij-atus* (A 6.1.8 [382]) > *i-ij-atus* (A 7.4.60 [383]) > *ījatus* (A 6.1.101 [532]) 'they two performed a rite'.

The verb *indh* 'kindle' ends with a cluster, yet has forms such as *īdhe* (3sg. pfct.). This is accounted for by deleting the penultimate *n* of the base, an operation that applies to stems followed by affixes marked with *k* or *ñ* (A 6.4.24 [446]). In addition, although *bhū* 'be' become' does not end in a cluster, it has perfect forms *babhūva, babhūvitha, babhūva* (A 6.4.88 [453]). Hence,

A 1.2.6: इन्धिभवतिभ्याञ्च। (*indhibhavatibhyāñ ca*)

provides that a *liṭ* ending is marked with *k* also after *indh* and *bhū* (*indhibhavatibhyām*).

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515 According to

A 1.2.9: इको झल् (सन् कित्) (*iko jhal* [*san* 8, *kit* 5])

A 1.2.10: हलन्ताच्च। (*halantāc ca*)

san (A 3.1.7 [279]) is marked with *k* provided it begins with *s* (*jhal*) --- that is, if it does not take the initial augment *iṭ* --- and follows a base that either ends with an *i-*, *u-*, *ṛ-*, or *ḷ*-vowel (*ikaḥ*) or has a final consonant (*halantāt*) preceded by such a vowel. For example: *cicīṣa* (< ... *ci-sa*: A 6.4.16 [422]) 'wish to heap up', *tuṣṭūṣa* (< ... *stu-sa*) 'wish to praise', *cikīrṣa* (< ... *kṛ-sa*) 'wish to make, to do', *bibhitsa* (< ... *bhid-sa-*) 'wish to split', *bubhutsa* (< ... *budh-sa-*) 'wish to perceive'.

After verbs with the forms covered by A 1.2.10 and verbs with final *ṛ*- vowels (*uḥ*), ātmanepada endings that derive from *liṅ* as well as the suffix *sic* (*liṅsicau*) followed by ātmanepada endings are marked with *k* if they are not augmented with *iṭ*, and after *gam* these affixes are optionally (*vā*) so marked under the same conditions:

A 1.2.11: लिङ्सिचावात्मनेपदेषु। (*liṅsicāv ātmanepadeṣu*)

A 1.2.12: उश्च। (*uś ca*)

A 1.2.13: वागमः। (*vā gamaḥ*)

For example: *bhitsīṣṭa* (3sg. prec. mid. < ... *bhid-sīyssta*: A 3.4.102, 107, 6.1.66, 8.2.29, 8.3.59, 8.4.41 [401, 522, 543, 563, 574]), *bhutsīṣṭa* (< ... *budh-sīyssta*), *abhitta* (3sg. aor .mid. < *abhid-s-ta*: A 8.2.26 [543]), *kṛṣīṣṭa* (< ... *kṛ-sīyssta*), *akṛta* (< *akṛ-s-ta*: A 8.2.27), *saṁ gaṁsīṣṭa* (< ... *gam-sīyssta*) / *saṁ gasīṣṭa* (A 6.4.37 [448]) 'may ... come together (with ...)', *sam agaṁsta* / *sam agasta* 'came together (with ...)'. Parasmaipada endings that derive from *liṅ* are marked with *k*, *ṅ* by A 3.4.103-104 (401).

516 Unaugmented *sic* preceding ātmanepada endings is marked with *k* also after *han* 'strike, kill' (*hanaḥ*) and *yam* used in the sense 'reveal someone's secret' (*gandhane*); this marking is

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also provided, optionally (*vibhāṣā*), for *sic* if this is followed by ātmanepada endings after *yam* in the sense 'marry' (*upayamane*):

A 1.2.14: **हनः सिच्।** (*hanaḥ sic*)

A 1.2.15: **यमो गन्धने।** (*yamo gandhane*)

A 1.2.16: **विभाषोपयमने।** (*vibhāṣopayamane*)

For example: *ā ahan-s-ta* (3sg. aor. with preverb *ā*) > *ā aha-s-ta* (A 6.4.37 [448]) > *ā ahata* (A 8.2.27 [543]) > *āhata* (A 6.1.101 [532]), *ud āyata* (< ... *ut ā ayam-s-ta*), *upāyata* (< ... *upa ā ayam-s-ta*). Not only is *sic* which precedes ātmanepada endings marked with *k* if it follows *sthā* 'be in place' or a verb of the ghu class (A 1.1.20 [51]), but the *-ā* of these bases (*sthāghvoḥ*) is then replaced by *-i* (*it*):

A 1.2.17: **स्थाघ्वोरिच्च।** (*sthāghvor ic ca*)

For example: *upāsthita* (< ... *upa ā asthā-s-ta*) 'approached, attended', *adita* (< ... *adā-s-ta*).

517 Some affixes that are marked with *k* to begin with are denied this marking under particular conditions. In general, *ktvā* (A 3.4.21 [259]) is not (*na*) marked with *k* if it has the initial augment *iṭ* (*seṭ*):

A 1.2.18: **न क्त्वा सेट्।** (*na ktvā seṭ*)

For example, the unaugmented suffix *tvā* of *jitvā* 'after winning', *stutvā* 'after praising', *kṛtvā* 'after making, doing', *dhvastvā* 'after disappearing, perishing' (A 7.2.56 [151]) is marked with *k* to show that it does not condition guṇa substitution and is a context for the deletion of penultimate *-n-* (A 1.1.5, 6.4.24 [98, 446]). On the other hand, *itvā*, as in *devitvā* 'after gambling', *dhvaṁsitva*, does condition guṇa substitution in a stem and is not a context in which penultimate *-n-* of a stem is dropped, so that the augmented suffix is said not to be marked with *k*.

The suffixes ***kta*** and ***ktavatu*** (*niṣṭhā*: A 1.1.26 [66]) are denied *k* marking if they have the initial augment *iṭ* and occur

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after the following verbs: *śīṅ* 'lie, sleep' (*śayita, śayitavat*), *svid* 'sweat' (*prasvedita, prasveditavat*), *mid* 'be moist, melt' (*pramedita, prameditavat*), *kṣvid* 'exhude, sweat' (*prakṣvedita, prakṣveditavat*), *dhṛṣ* 'be daring, bold' (*pradharṣita, pradharṣitavat*); *mṛṣ* (*mṛṣaḥ*) used in the sense 'forebear' (*titikṣāyām*: *marṣita, marṣitavat,* but *apamṛṣṭa* 'unclear'):

A 1.2.19: **निष्ठा शीङ्स्विदिमिदक्ष्विदिधृषः।**

(*niṣṭhā śīṅsvidimidikṣvididhṛṣaḥ*)

A 1.2.20: **मृषस्तितिक्षायाम्।** (*mṛṣas titikṣāyām*)

518 After a verb with penultimate short *-u-* (*udupadhāt*), augmented *kta* is optionally (*anyatarasyām*) not marked with *k,* provided it is introduced on condition that an action or the beginning of an act is signified (*bhāvādikarmaṇoḥ*: A 3.4.70-72 [248]):

A 1.2.21: **उदुपधाद्भावदिकर्मणोरन्यतरस्याम्**

(*udupadhād bhāvādhikarmaṇor anyatarasyām*)

For example, *dyutita*/ *dyotita* 'grown light, shone', *pradyutita*/ *pradyotita* 'begun to shine', from the verb *dyut.* After *pūṅ* 'become purified', not only *kta* and *ktavatu* with the augment *iṭ* but also (*ca*) *ktvā* with this augment are denied *k* marking (*pavita, pavitavat, pavitvā*):

A 1.2.22: **पूङः क्त्वा च।** (*pūṅaḥ ktvā ca*)

ktvā augmented with *iṭ* also is optionally (*vā*) not marked with *k* if it follows a verb with penultimate *-n-* (*nopadhāt*) and final *th* or *ph* (*thaphāntāt*), as well as *vanc* 'go, deceive', *lunc* 'pluck, tear away', *ṛt* 'have differences, abhor, hate' (*vañciluñcyṛtaḥ*):

A 1.2.23: **नोपधात्थफान्ताद्वा।** (*nopadhāt thaphāntād vā*)

A 1.2.24: **वञ्चिलुञ्च्यृतश्च।** (*vañciluñcyṛtaś ca*)

E.g., *grathitvā* / *granthitvā* (*granth* 'bind, knot'), *guphitvā* / *gumphitvā* (*gunph* 'tie together'), *vacitvā* / *vañcitvā, lucitvā* / *luñcitvā, artitvā* / *ṛtitvā.* Moreover, according to Kāśyapa (*kāśyapasya*), augmented *ktvā* is optionally not marked with

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k following *tṛṣ* 'be dry, thirst' (*tṛṣitvā* / *tarṣitvā*), *mṛṣ* 'bear, forebear' (*mṛṣitvā* / *marṣitvā*), *kṛś* 'become slender' (*kṛśitvā* / *karśitvā*):

A 1.2.25: **तृषिमृषिकृशेः काश्यपस्य।** (*tṛṣimṛṣikṛśeḥ kāśyapasya*)

In dialects other than the one Kāśyapa observes, one has only *tarṣitvā, marṣitvā, karśitvā,* as provided for in A 1.2.18 (517).

519 After a verb that begins with a consonant (*halādeḥ*), ends in consonants other than *y* or *v* (*ralaḥ*), and has *u*- or *ṛ*-vowels as penultimate sounds (*vyupadhāt*), not only *ktvā* augmented with *iṭ* but also *san* (*saṁś ca*: A 3.1.7 [279]) so augmented is optionally marked with *k*:

A 1.2.26: **रलो व्युपधाद्धलादेः संश्च।** (*ralo vyupadhād dhalādeḥ saṁś ca*)

For example: *dyutitvā* / *dyotitvā, didyutiṣa* / *didyotiṣa* (*dyut* 'lighten, shine'), *likhitvā* / *lekhitvā, lilikhiṣa* / *lilekhiṣa* (*likh* 'write').

520 There are instances where augmented *ktvā* and *san* which, by A 1.2.18, 26 (517, 519), would either not be marked with *k* or only optionally be so marked must, for operations relative to subgroups of verbs covered by these rules, have this marking. There are also instances where unaugmented *san* is to be marked with *k*. The following sūtras provide for such marking:

A 1.2.7: **मृडमृदगुधकुषक्लिशवदवसः क्त्वा।** (*mṛḍamṛdagudhakuṣakliśavadavasaḥ ktvā* [*kit* 5])

A 1.2.8: **रुदविदमुषग्रहिस्वपिप्रच्छः संश्च।** (*rudavidamuṣagrahisvapipracchaḥ saṁś ca*)

After *mṛḍ* 'be gracious', *mṛd* 'rub, press, crush', *gudh* 'cover', 'be angry', *kuṣ* 'draw', *kliś* 'suffer, cause to suffer' *vad* 'say, speak', and *vas* 'dwell, remain', *ktvā* is marked with *k*. Both this suffix and *san* are so marked after *rud* 'cry, weep', *vid* 'know', *muṣ* 'steal', *grah* 'grasp, seize', *svap* 'sleep, dream', *prach* 'ask': *mṛḍitvā, mṛditvā, gudhitvā, kuṣitvā, kliśitvā,*

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uditvā, uṣitvā; ruditvā, rurudiṣa, viditvā, vividiṣa, muṣitvā, mumuṣiṣa, gṛhītvā, jighṛkṣa, suptvā, suṣupsa, pṛṣṭvā, pipṛcchiṣa.

Remark.

521 The reading I have given for A 7.1.90 (511) is known to Pāṇinīyas. Thus, in its comments on the sūtra, the Kāśikā notes (II.794: **केचिदोतो णिदिति पठन्ति।**) that some accept this reading. The reading generally accepted and known from the time of Kātyāyana, however, is **गोतो णित्।**, with *gotaḥ* instead of *otaḥ*. This will account only for forms of *go*, not also for forms of *dyo* 'day' Moreover, A 6.1.93: **औतोऽम्शसोः।**(530), which has to account for *gām, gāḥ* (acc. sg., pl.), provides that *ā* replaces *o* (*otaḥ*) and a following vowel of the endings *am, śas*. As formulated, this sūtra accounts also for a form such as *dyām*. Consequently, I accept the conclusion, reached by some modern scholars, that the usual reading of A 7.1.90 results from an early development in oral transmission: a transitional *g* was inserted between the *-i* of *asuṅ* in A 7.1.89 (473) and the *o-* of the next sūtra. For another change in oral transmission of a sūtra (A 8.3.4 [555]), see 585.

2.7.2. Other sound replacements and augments.

2.7.2.1. Rules outside the tripādī.

2.7.2.1.1. Rules outside the section headed by A 6.1.72.

522 *v* and *y* (*vyoḥ*) are replaced by zero (*lopaḥ*) before a consonant other than *y* (*vali*):

A 6.1.66: **लोपो व्योर्वलि।** (*lopo vyor vali*)

For example: *didiv-vas* (affix *kvasu*: A 3.2.107 [232]) › *didivas* '(one who) gambled', *paca-iyvahi* › *paca-ivahi* › *pace-*

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vahi, paca-iyran > *paca-iran* > *paceran* (see 401).

523 *ḍh* is deleted before another *ḍh*, and *r* is deleted before *r* (A 8.3.13-14 [556]). Once the deletion of *ḍh* and *r* has taken effect (*ḍhralope*), a vowel *a i u* (*aṇaḥ*) that precedes (*pūrvasya*) the original sound dropped is then replaced by a corresponding long vowel (*dīrghaḥ*):

A 6.3.111: **ढ्रलोपे पूर्वस्य दीर्घोऽणः।** (*ḍhralope pūrvasya dīrgho'ṇaḥ*)

For example: *lih-ta* (affix *kta*: A 3.2.102 [294]) > *liḍh-ta* (A 8.2.31 [544]) > *liḍh-dha* (A 8.2.40 [547]) > *liḍh-ḍha* (A 8.4.41 [574]) > *li-ḍha* > *līḍha* 'licked', *guh-ta* > *guḍh-ta* > ... *gu-ḍha* > *gūḍha*- 'hidden', *punar raktam* > *puna raktam* > *punā raktam* 'colored anew'.

2.7.2.1.2. Rules of the section headed by A 6.1.72.

524 A series of sūtras, headed by A 6.1.72 (107), provides for operations that take effect when items are pronounced in close junction, without any intervening pause. The general rule of semivowel substitution (A 6.1.77 [125]) is one of the sūtras of this group. In addition, as provided for in

A 6.1.78: **एचोऽयवायावः।** (*eco'yavāyāvaḥ*)

ay av āy āv, respectively, substitute for *e o ai au* followed by a vowel, as in *agnaye* (< *agne-e*: A 7.3.111 [484]), *vāyave* (< *vāyo-e*), *nāy-i* 'have ... guide, lead' (< *nai-i*: A 7.2.115 [417]), *lāv-i* 'have ... cut' (< *lau-i*).

Moreover, a substitute that ends with *v* (*vāntaḥ*) occurs in place of *o, au* before *y-* of an affix (*yi pratyaye*), but, if *-o* or *-au* belongs to a verb (*dhātoḥ*), this substitution applies only to such a sound as is conditioned by the affix that follows (*tannimittasyaiva*):

A 6.1.79: **वान्तो यि प्रत्यये।** (*vānto yi pratyaye*)

A 6.1.80: **धातोस्तन्निमित्तस्यैव।** (*dhātos tannimittasyaiva*)

The first of these rules accounts for examples such as

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māṇḍavya (affix *yañ*: A 4.1.105 [335])'descendant of Maṇḍu', the derivation of which involves replacing *-u* of the stem with the guṇa vowel *-o* (A 6.4.146 [504]). A derivate like *ceya* contains the affix *yaṭ* (A 3.1.97 [122]), which conditions guṇa-vowel substitution (A 7.3.84 [127]): *ci-ya* › *ce-ya*. The same affix is introduced to derive *lavya* 'which is to be cut', and again the affix conditions the replacement of the base-final vowel by a guṇa vowel, here *-o* in place of *-ū*. The *-o* of *lo-* is then replaced by *-av* according to A 6.1.80.

In particular instances, one also has *-ay* instead of *-e* before *-y*, as in *kṣayya* 'which can be destroyed', *jayya* 'which can be conquered'. Special rules account for these. Thus,

A 6.1.81: **क्षय्यजय्यौ शक्यार्थे।** (*kṣayyajayyau śakyārthe*)

provides that *kṣayya* and *jayya* (*kṣayyajayyau*) occur in the meaning 'which can ...' (*śakyārthe*). These contrast with *kṣeya* 'which is to be destroyed, should be destroyed', *jeya* 'which is to be conquered, should be conquered'.

525 According to

A 6.1.113: **अतो रोरप्लुतादप्लुते (अति उत्)** (*ato ror aplutād aplute* [*ati* 109, *ut* 111])

A 6.1.114: **हशि च।** (*haśi ca*)

u (*ut*) replaces *R* (*roḥ*: A 8.2.66 [551]) if this occurs after unprolated (*aplutāt*) *a* (*ataḥ*) and is followed by unprolated *a* (*aplute ati*) or a voiced consonant (*haśi*). For example: *kaR atra* › *kaü atra* › *ko atra* (A 6.1.87 [528]) › *kotra* (A 6.1.109 [533]) 'who is here?', *devadattaR hasati* › *devadattaü hasati* › *devadatto hasati* 'Devadatta is laughing'.

526 The ending *su* is replaced by zero (*sulopaḥ*) if it is linked to *etad* 'this', *tad* 'that' (*etattadoḥ*) and is followed by a consonant (*hali*), on condition that the pronouns *etad, tad* do not have *k* of the affix *ak* (*akoḥ*: A 5.3.71 [354]) and are not part of a negative compound (*anañsamāse*):

A 6.1.132: **एतत्तदोः सुलोपोऽकोरनञ्समासेहलि।**
(*etattadoḥ sulopo'kor anañsamāse hali*)

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For example: *tad-s gacchati* > ... *sa-s gacchati* (see 476) > *sa gacchati* 'that one is going'.

527 A group of sūtras, headed by

A 6.1.135: **सुट् कात्पूर्वः।** (*suṭ kāt pūrvaḥ*)

give conditions under which the augment *suṭ* is added, preceding the *k-* (*kāt pūrvaḥ*) of particular verbs used with given preverbs. For example, by

A 6.1.137: **सम्परिभ्याङ्करोतौ भूषणे।** (*samparibhyāṅ karotau bhūṣaṇe*, see 537)

A 6.1.138: **समवाये च।** (*samavāye ca*)

suṭ is added to *kṛ* (*karotau*) after the preverbs *sam, pari* when the complex of preverb and verb is used in the meaning 'adorn' (*bhūṣaṇe*), 'form a group' (*samavāye*), as in *saṁ skaroti* (3sg. pres. < *sam skaroti*: A 8.3.23 [559]).

528 The section A 6.1.72 (107) heads contains a subsection headed by A 6.1.84 (106). Sūtras of this section provide that one sound occurs in place of both a preceding and a following sound. For example, according to

A 6.1.87: **आद् गुणः।** (*ād guṇaḥ* [*aci* 77])

an *a*-vowel and a following vowel are both replaced by a guṇa vowel (*guṇaḥ*: A 1.1.2 [9]), as in *tavedam* (< *tava idam*) 'this is yours', *khaṭveha* (< *khaṭvā iha*) 'the bed is here', where the guṇa vowel *e* substitutes for *a*+ *i* and *ā*+ *i*. The contiguous elements subject to replacement are referred to by ablative and locative forms like *āt* 'an *a*-vowel', *aci* 'a vowel', respectively ablative singular of *a* and locative singular of *ac*. Recall that, according to A 1.1.66-67 (90), locative and ablative forms not unambiguously interpretable in a given context are interpreted respectively as referring to elements which serve as contexts for operations on what precedes and follows. The ablative *āt* of A 6.1.87 and the locative *aci* understood to recur in this sūtra are to be interpreted by means of these metarules. Yet, in accordance with A 6.1.84, they also refer to substituends. In effect, instead of formulating uncontextualized rules of the

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type *a* + *b* › *c*, Pāṇini formulates rules in which the substituends are treated as their own contexts.

529 According to:

A 6.1.88: **वृद्धिरेचि(आत्)** (*vṛddhir eci* [*āt* 87])

A 6.1.89: **एत्येधत्यूठ्सु।** (*etyedhatyūṭhsu*)

A 6.1.90: **आटश्च।** (*āṭaś ca*)

A 6.1.91: **उपसर्गादृति धातौ।** (*upasargād ṛti dhātau*)

A 6.1.92: **वा सुप्यापिशलेः।** (*vā supy āpiśaleḥ*)

a vṛddhi vowel (*vṛddhiḥ*: A 1.1.1 [9]) is the single replacement for two contiguous sounds as follows:

A 6.1.88: an *a*-vowel and a following vowel *e o ai au* (*eci*); e.g., *kanyā eti* › *kanyaiti* 'the girl is going', *devadattena odanaḥ* › *devadattenaudanaḥ* (see (20b) [230, 244]), *atra aitikāyanaḥ* › *atraitikāyanaḥ* 'here is a descendant of Itika', *atra aupagavaḥ* › *atraupagavaḥ* 'here is a descendant of Upagu'.

A 6.1.89: an *a*-vowel and the *e*- of the verbs *i* 'go' (*eti*), *edh* 'thrive' (*edhati*), as well as *ūṭh* (A 6.4.132 [501]); e.g., *upa eti* › *upaiti* 'approaches', *pra edhate* › *praidhate* 'is thriving' (cf. A 6.1.94 [531]), *viśvaūhas* › *viśvauhas*.

A 6.1.90: *āṭ* and a following vowel; e.g., *āikṣata* (A 6.4.72 [238]) › *aikṣata* 'looked', *aurṇot* 'covered' (< ... *āūrnu-t*).

A 6.1.91-92: *-a* of a preverb (*upasargāt*) and *ṛ-* (*ṛti*) of a following verb (*dhātau*); according to Āpiśali (*āpiśaleḥ*), this is optional (*vā*) if the verb is denominative (*supi* [see 287]); e.g., *upa ṛcchati* › *upārcchati* 'approaches', *pra ṛṣabhīyati* › *prārṣabhīyati* 'wishes for a bull' (also *prarṣabhīyati*, with guṇa vowel substitution by A 6.1.87 [528], in the dialect observed by Āpiśali).

530 The single replacement for *o* (*otaḥ*) and the vowel of *am, śas* (*amśasoḥ*) is *ā*:

A 6.1.93: **औतोऽम्शसोः।** (*auto'mśasoḥ*)

For example: *go-am* › *gām* (acc. sg.), *go-as* › *gās* (acc. pl.) 'cow(s), bull(s)'.

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531 The *-a* of a preverb and a following vowel *e* or *o* (*eñi*) are both replaced by the second vowel (*pararūpam* 'subsequent form'), as in *preṣaṇā* (< *pra eṣaṇā*) 'command', *pra oṣati* > *proṣati* 'burns':

A 6.1.94: **एङि पररूपम् (आत् उपसर्गात् धातौ)** (*eṅi pararūpam* [*āt* 87, *upasargāt dhātau* 91])

The following sūtras also provide that an *a*-vowel and a following vowel are replaced by the second one alone:

A 6.1.95: **ओमाङोश्च।** (*omāṅoś ca*)

A 6.1.96: **उस्यपदान्तात्।** (*usy apadāntāt*)

A 6.1.97: **अतो गुणे।** (*ato guṇe*)

The first of these rules concerns sequences where the second vowel is that of *om* (a sacred and auspicious syllable also used to convey assent) or the preverb *āṅ* (*omāṅoḥ*); e.g., *adya ā ūḍhā* > *adya oḍhā* (A 6.1.87 [528]) > *adyoḍhā* 'has been brought (as a bride) today'. The next two rules have to do with sequences in which the first vowel is not pada-final (*apadāntāt*) and the second is the vowel of *us* (*usi*) or a guṇa vowel (*guṇe*); e.g., *adā-us* > *adus* (see 402), *pac-a-anti* > *pacanti* 'they are cooking', *pac-a-e* > *pace* 'I am cooking for myself'.

532 The single substitute for a sequence in which the first vowel is one of the set denoted by *ak* (*akaḥ*: 129-130) and the second vowel is homogeneous with it (*savarṇe*: A 1.1.9-10 [33-34]) is a long vowel (*dīrghaḥ*):

A 6.1.101: **अकः सवर्णे दीर्घः।** (*akaḥ savarṇe dīrghaḥ*)

For example: *daṇḍa-agra* > *daṇḍāgra* 'tip of a staff', *kanyā atra* > *kanyātra* 'the girl is here', *dadhi iha* > *dadhīha* 'there are curds here', *madhu-udaka* > *madhūdaka* 'honey and water'.

If a vowel of the set denoted by *ak* is followed by a vowel of an ending in the first two triplets of nominal endings (*prathamayoḥ*), the single replacement is generally a long vowel homogeneous with the first (*pūrvasavarṇaḥ*):

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A 6.1.102: **प्रथमयोः पूर्वसवर्णः।** (*prathamayoḥ pūrvasavarṇaḥ*)

For example: *agni-au* > *agnī* (nom.-acc. du.) 'fires', *vāyu-au* > *vāyū* 'winds', *vṛkṣa-as* > *vṛkṣās* (nom. pl.) 'trees', *kumārī-as* > *kumārīs* 'maidens' (acc. pl.), *mātṛ-as* > *mātṝs* 'mothers'. After such long vowel gotten by this substitution (*tasmāt*), moreover, the *-s* of *śas* (*śasaḥ*) is replaced by *n* (*naḥ*) in the masculine (*puṁsi*):

A 6.1.103: **तस्माच्छसो नः पुंसि।** (*tasmāc chaso naḥ puṁsi*)

For example: *vṛkṣa-as* > *vṛkṣās* > *vṛkṣān* (acc. pl.), *agni-as* > ... *agnīn*, *vāyu-as* > ... *vāyūn*, *kartṛ-as* > ... *kartṝn* 'makers, doers, agents'.

Replacement by a single long vowel does not (*na*) apply, contrary to A 6.1.102, if the first element of a sequence is an *a*-vowel (*āt*) and the second is a vowel denoted by *ic* (*ici*); nor does this replacement apply if the first element is a long vowel (*dīrghāt*) and the second is a vowel of the set denoted by *ic* or the vowel of *jas* (*jasi*):

A 6.1.104: **नादिचि।** (*nād ici*)

A 6.1.105: **दीर्घाज्जसि च।** (*dīrghāj jasi ca*)

For example: *vṛkṣa-au* > *vṛkṣau* (A 6.1.88 [529]), *phala-ī* (A 7.1.19 [493]) > *phale* (A 6.1.87 [528]), *kumārī-au* > *kumāryau* (A 6.1.77 [125]), *kumārī-as* > *kumāryas*.

Since there are Vedic forms like *devī* (nom.-acc. du.), *devīḥ* (nom. pl.) 'goddesses', in addition to forms with *-yau* and *-yas*,

A 6.1.106: **वा छन्दसि।** (*vā chandasi*)

provides that the replacements disallowed by the preceding two rules are only optionally (*vā*) disallowed with respect to usage in sacred literature (*chandasi*).

533 In some instances, it is simply the first (*pūrvaḥ* 'prior') of two contiguous vowels that is made the single replacement for

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both. By

A 6.1.107: **अमि पूर्वः।** (*ami pūrvaḥ*)

A 6.1.108: **सम्प्रसाराणाच्च।** (*samprasāraṇāc ca*)

this substitution takes effect if the second vowel is the one in *am* (*ami*) and if it follows a samprasāraṇa vowel (*samprasāraṇāt*: A 1.1.45 [38]); e.g., *vṛkṣa-am* > *vṛkṣam* (acc. sg.), *kanyā-am* > *kanyām*, *agni-am* > *agnim*, *vāyu-am* > *vāyum*, *vac-ta* > *uac-ta* (A 6.1.15 [388]) > *uc-ta* > *ukta* (A 8.2.30 [544]).

In addition, the first of two vowels is the sole substitute for both in sequences where pada-final (*padāntāt*) *e* or *o* (*eṅaḥ*) is followed by *a-* (*ati*) and where pada-interior *e* or *o* occurs before either of the endings *ṅasi*, *ṅas* (*ṅasiṅasoḥ*):

A 6.1.109: **एङः पदान्तादति।** (*eṅaḥ padāntād ati*)

A 6.1.110: **ङसिङसोश्च।** (*ṅasiṅasoś ca*)

For example: *sarve atra* (see 492) > *sarvetra* 'all are here', *ko atra* > *kotra* (see 525), *agne-as* (A 7.3.111 [484]) > *agnes*, *vāyo-as* > *vāyos*.

534 On the other hand, *u* (*ut*), automatically followed by *r* (A 1.1.51 [93]), is the single replacement for *ṛ* (*ṛtaḥ*) and the *a-* of *ṅasi*, *ṅas*:

A 6.1.111: **ऋत उत्।** (*ṛta ut*)

For example: *pitṛ-as* > *piturs* > *pitur* (A 8.2.24 [542]) 'father'. The same replacement *u* substitutes for the *a-* of *ṅasi* or *ṅas* following (*parasya*) *khy* or *ty* (*khyatyāt*):

A 6.1.112: **ख्यत्यात्परस्य।** (*khyatyāt parasya*)

sakhi-as > *sakhy-as* (A 6.1.77 [125]) > *sakhy-urs* > *sakhyur* 'friend', *pati-as* > ... *patyur* 'master, husband'.

535 Pluta vowels (A 1.2.27 [35]) and the final vowels of pragṛhya elements (76) are not subject to sound replacments. For example, the *-aƷ* of *devadattaƷ* (A 8.2.83-84 [621]) is not subject to the replacement that generally applies when a vowel is contiguous to a homogeneous vowel (A 6.1.101 [532]) such as the *a-* of *atra* 'here'. Nor is the *-ī* of *agnī* subject to this

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replacement before the *i-* of *iha* 'here': *agnī iha*, not **agnīha*; the *-ī* of such a dual form also is not subject to semivowel replacement (A 6.1.77 [125]) before a vowel such as the *a-* of *atra*: *agnī atra*. The *-e* of *ubhe* 'both' and the *-a* of an item such as *abhyastam* are not both replaced by *-e-* (A 6.1.109 [533]): *ubhe abhyastam* (A 6.1.5 [52]). Accordingly,

A 6.1.125: **प्लुतप्रगृह्या अचि नित्यम् (प्रकृत्या)**

(*plutapragṛhyā aci nityam* [*prakṛtyā* 115])

provides that pluta vowels and pragṛhya elements (*pluta-pragṛhyāḥ*) necessarily (*nityam*) remain in their original forms (*prakṛtyā*) before vowels (*aci*).

536 Sounds are also subject to augmenting when they are in close junction with others. By

A 6.1.73: **छे च (ह्रस्वस्य तुक्)** (*che ca* [*hrasvasya tuk* 71])

a short vowel (*hrasvasya*) gets the final augment *tuk* if *ch* follows (*che*) in close junction; e.g., *ich-a-ti* (A 7.3.77 [434]) > *itch-a-ti* > *icchati* (A 8.4.40 [574] The same augment is added to a long vowel (*dīrghāt*) followed by *ch*, but only optionally (*vā*) if the vowel is pada-final (*padāntāt*):

A 6.1.75: **दीर्घात्।** (*dīrghāt*)

A 6.1.76: **पदान्ताद्वा।** (*padāntād vā*)

For example: *hrīch-a-ti* > *hrītch-a-ti* > *hrīcchati* 'is ashamed, bashful', *kuṭī-chāyā* > (optionally) *kuṭīt-chāyā* > *kuṭīcchāyā* 'shade of a cottage'. On the other hand, *āṅ* and *māṅ* (*āṅmāṅoḥ*) are augmented obligatorily with *tuk* when *ch* follows across a pada boundary:

A 6.1.74: **आङ्माङोश्च।** (*āṅmāṅoś ca*)

For example: *ā chādayati* > *āt chādayati* > *ācchādayati* 'covers', *mā chaitsīt* > *māt chaitsīt* > *mācchaitsīt* 'let him not cut'.

Remark

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537 I have cited A 6.1.137, 6.1.125 (527, 535) as they were known to earliest Pāṇinīyas, in accordance with evidence in the Mahābhāṣya (Bh. III.93.13 [on A 6.1.135], III.216.1 [on A 6.4.110], III.87.24 [on A 6.1.125]). The Kāśikā reads *samparyupebhyaḥ* instead of *samparibhyām* in A 6.1.137 and *plutapragṛhyā aci* in A 6.1.125, taking *nityam* as part of the preceding sūtra. In addition, the Kāśikā has a sūtra *6.1.136: **अङभ्यासव्यवायेऽपि** (*aṅabhyāsavyavāye'pi*) following A 6.1.135 (527). According to this rule, *suṭ* is added even if the *k-* in question is separated from a preceding element by the augment *aṭ* or an abhyāsa syllable. What the Kāśikā has incorporated as part of the Aṣṭādhyāyī sūtrapāṭha reflects additions suggested in Kātyāyana's fifth and sixth vārttikas on A 6.1.135 (**अङ्व्यवाय उपसङ्ख्यानम्। अभ्यासव्यवाये च।**). Details will be discussed under these rules in part VI.5 of my work.

2.7.2.2. Rules in the tripādī.

538 A sūtra of the tripādī, headed by A 8.2.1(109) is generally suspended (*asiddham*) with respect to any sūtra that precedes (*pūrvatra*), but there are exceptions to this. Thus, A 8.3.13-14 (556), whereby *ḍh* and *r* are deleted, are not suspended with respect to A 6.3.111 (523). This is obviously so, given that A 6.3.111 specifically depends for its application on the deletion of *ḍh* and *r*, which it refers to. Similarly, A 8.2.66 (551), which lets *-R* substitute for *-s* is not suspended in relation to A 6.1.113-114 (525). In addition,

A 8.2.2: **नलोपः सुप्स्वरसंज्ञातुग्विधिषु कृति।** (*nalopaḥ supsvarasaṁjñātugvidhiṣu kṛti*)

provides that A 8.2.7 (539), which serves to delete *-n* (*nalopaḥ*), is suspended only with respect to particular rules, namely those that provide operations connected with nominal endings (*sup*), those which let particular accents (*svara*) or class names (*saṁjñā*) take effect, and the sūtra that lets the

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final augment *tuk* occur (*supsvarasaṁjñātugvidhiṣu*) before a *kṛt* affix (*kṛti*: A 6.1.71 [394]). Further, by

A 8.2.3: **न मु ने।** (*na mu ne*)

the rule whereby *mu* occurs in forms of *adas* (A 8.2.80 [553]) is not (*na*) suspended in respect of the sūtra which lets *nā* replace *āṁ* (*ne*: A 7.3.120 [497]). See 655-657.

539 *-n* of a pada (*padasya*: A 8.1.16 [105]) which is also a prātipadika (*prātipadikāntasya*: 48) is generally deleted (*na-lopaḥ*), but not (*na*) in Vedic locative forms, which originally have the ending *ṁi* in their derivation, or in vocative forms, which originally have the sambuddhi ending *su* (*ṅisambuddhyoḥ*: A 2.3.49 [68]):

A 8.2.7: **नलोपः प्रातिपदिकान्तस्य।** (*nalopaḥ prātipadikāntasya*)

A 8.2.8: **न ङिसम्बुद्ध्योः।** (*na ṅisambuddhyoḥ*)

For example, the ending *su* of *rājan-s* is dropped (A 6.1.68 [404]). In accordance with A 1.1.62 (103), long-vowel replacement (A 6.4.8 [469]) applies: *rājan* > *rājān*. By the same metarule, *rājān* is a pada (A 1.4.14 [49]) even after the ending *su* has been deleted. Consequently, *rājān* is a nominal base (*prātipadika*) and a pada at once. A 8.2.7 serves to delete the *-n* of this item. The rule also provides for deleting the *-n* of *rājan-* in forms such as *rāja-bhyām* (A 1.4.17 [75]): *rājān* > *rājā* (nom. sg.), *rājan-bhyām* > *rājabhyām* (instr.-dat.-abl. du.). On the other hand, the *-n* of *rājan* (< *rājan-s*), originally with the sambuddhi ending *su*, is not dropped; nor is the *-n* of a Vedic locative form such as *carman* (< *carman-i*) 'on the hide' subject to deletion.

540 The initial sound (A 1.1.54 [95]) of *matup* (*matoḥ*: A 5.2.94 [346]) is replaced by *v* (*vaḥ*) following final or penultimate (*upadhāyāś ca*) *m*, *a* (*māt*), except where these are parts of items of the type in the group that begins with *yava* 'barley' (*ayavādibhyaḥ*); the substitution also applies after non-nasal stops (*jhayaḥ*):

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A 8.2.9: मादुपधायाश्च मतोर्वोऽयवादिभ्यः। (*mād upadhāyāś ca mator vo'yavādibhyaḥ*)

A 8.2.10: झयः। (*jhayaḥ*)

For example: *śamīvat* 'which has many Śamī trees on it', *vṛkṣavat* 'which has many trees', *yavamat* 'rich in barley', *vidyutvat* 'which has lightening in it'.

541 According to

A 8.2.18: कृपो रो लः। (*kṛpo ro laḥ*)

l (*laḥ*) substitutes for *r* (*raḥ*) --- whether this is a separate sound or included in *ṛ* --- of the verb *kṛp* (*kṛpaḥ*) 'be fit, arrange'; e.g., *kalp-tṛ* 'one who arranges' (< *karp-tṛ* < *kṛp-tṛ*), *kḷpta* 'arranged' (< *kṛp-ta*).

Other sūtras provide for *l* to replace the *r* of preverbs in particular contexts. Thus, by

A 8.2.19: उपसर्गस्यायतौ। (*upasargasyāyatau*)

the *r* of a preverb (*upasargasya*: A 1.4.59 [55]) is replaced by *l* before the verb *ay* (*ayatau*), as in *palāyate* (< ... *parā ayate*) 'flees'.

542 The final sound (A 1.1.52 [95]) of a pada (*padasya*: A 8.1.16 [105]) that ends with a consonant cluster (*saṁyogāntasya*) is replaced by zero (*lopaḥ*), as in *gomān* (< *gomānt* [see 469]):

A 8.2.23: संयोगान्तस्य लोपः। (*saṁyogāntasya lopaḥ*)

Not all pada-final clusters, however, are thus simplified by deletion. Clusters in which *r* precedes a consonant other than *s* are allowed. For example, from *amṛj-t*, one should derive *amārṭ* (3sg. impfct.) 'wiped, cleaned': *amṛj-t* > *amṛj* (A 6.1.68 [404]) > *amārj* (A 7.2.114 [415]) > *amārṣ* (A 8.2.36 [544]) > *amārḍ* (A 8.2.39 [546]) > (optionally) *amārṭ* (A 8.4.56 [578]). A 8.2.23 should not apply to delete the *-j* of *amārj*. On the other hand, *-rs* should be simplified to *-r*, as in *pitur* (< *piturs*: A 6.1.111 [534]). Consequently, in

A 8.2.24: रात्सस्य। (*rāt sasya*)

Pāṇini provides for the deletion of *-s* (*sasya*) after *r* (*rāt*) in

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a pada-final cluster. Since, in the absence of this sūtra, the general rule A 8.2.23 would allow dropping the *-s* of *-rs*, A 8.2.24 is in effect a restrictive rule, whereby in a pada with a final cluster including *-r-* only *-s* is dropped after *-r-*, so that forms like *amārṭ* are accounted for.

543 Pada-interior *-s-* is also subject to deletion as follows: before *dh* (*dhi*); when a consonant other than a semivowel or a nasal both precedes (*jhalaḥ*) and follows it (*jhali*); after a stem (*aṅgāt*) that ends in a short vowel (*hrasvāt*); when it follows *iṭ* (*iṭaḥ*) and precedes *iṭ* (*iṭi*):

A 8.2.25: **धि च।** (*dhi ca*)

A 8.2.26: **झलो झलि।** (*jhalo jhali*)

A 8.2.27: **ह्रस्वादङ्गात्।** (*hrasvād aṅgāt*)

A 8.2.28: **इट ईटि।** (*iṭa īṭi*)

For example: *alav-is-dhvam* (*-is-*: A 3.1.44, 7.2.35 [236, 145]) > *alavidhvam* (2pl. aor. mid.) 'you cut', *abhid-s-ta* > *abhid-ta* > *abhitta* (A 8.4.55 [578]) '... split' (3sg. aor. mid.), *akṛ-s-ta* > *akṛta* '... made', *adev-iṣ-iṭ* (*-iṭ*: A 7.3.96 [440]) > *adeviiṭ* > *adevīt* (A 6.1.101 [532]) 'gambled'.

Moreover, cluster-initial (*saṁyogādyoḥ*) *s* and *k* (*skoḥ*) are deleted both in the interior of a pada, when a consonant other than a nasal or a semivowel follows (*jhali*), and when the clusters to which they belong occur at the end of a pada ([*padasya*: A 8.1.16] *ante ca*):

A 8.2.29: **स्कोः संयोगाद्योरन्ते च (झलि)** (*skoḥ saṁyogādyor ante ca* [*jhali* 26])

For example: *lasj-ta* > *laj-ta* > *lag-ta* (A 8.2.30 [544]) > *lagna* (A 8.2.45 [549]) 'ashamed, bashful', *takṣ-ta* > *taṣ-ta* > *taṣṭa* (A 8.4.41 [574]) 'fashioned'.

544 Before a consonant other than a nasal or a semivowel (*jhali*) and in pada-final position, a series of other sound replacements apply. Velar stops (*kuḥ*) occur instead of palatals (*coḥ*):

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A 8.2.30: चोः कुः। (*coḥ kuḥ*)

For example: *vac-tum* > *vaktum* 'to speak, say', *vac-sya-ti* > *vak-sya-ti* > *vakṣyati* (A 8.3.59 [563]) 'will speak, say', *vāc-s* (nom. sg.) > *vāc* (A 6.1.68 [404]) > *vāk* > *vāg* (A 8.2.39 [546]) > (optionally) *vāk* (A 8.4.56 [578]) 'voice, speech'.

-h is generally replaced (*haḥ*) by *ḍh* (*ḍhaḥ*); however, *gh* (*ghaḥ*) substitutes for *-h* of a verb (*dhātoḥ*) that begins with *d* (*dādeḥ*):

A 8.2.31: हो ढः। (*ho ḍhaḥ*)

A 8.2.32: दादेर्धातोर्घः। (*dāder dhātor ghaḥ*)

In addition, the *-h* of *druh* 'wish ill, wish to harm', *muh* 'be confused', *ṣnuh* 'throw up, vomit', and *ṣnuh* 'be moist' (*druhamuhaṣṇuhaṣṇihām*) is optionally (*vā*) replaced by *-gh*, and *dh* replaces the *-h* of *nah* 'bind' (*nahaḥ*):

A 8.2.33: वा द्रुहमुहष्णुहष्णिहाम्। (*vā druhamuhaṣṇuhaṣṇihām*)

A 8.2.34: नहो धः। (*naho dhaḥ*)

For example: *lih-ta* > *liḍh-ta* > ... *līḍha* (see 523), *doh-tum* > *dogh-tum* > *dogh-dhum* (A 8.2.40 [547]) > *dogdhum* (A 8.4.53 [577]) 'to milk', *droh-tum* > *drogh-tum* > ... *drogdhum*, *droh-tum* > *droḍh-tum* > ... *droḍhum*, *nah-tum* > *nadh-tum* > *nadh-dhum* > *naddhum*. Further, *th* (*thaḥ*) replaces the *-h* of *āh* (*āhaḥ*):

A 8.2.35: आहस्थः। (*āhas thaḥ*)

āh occurs only followed by five endings (A 3.4.84 [397]), of which only *thal* begins with a consonant: *āh-tha* > *āth-tha* > *āttha* (A 8.4.55 [578]).

Finally, *-ṣ* (*ṣaḥ*) substitutes for the final consonants of *vrasc* 'cut, hew', *bhrasj* 'fry', *sṛj* 'let loose, create', *mṛj* 'wipe, clean', *yaj* 'venerate, perform a sacrificial rite', *rāj* 'shine', *bhrāj* 'shine', and items that end with *ch* or *ś*:

A 8.2.36: व्रश्चभ्रस्जसृजमृजयजराजभ्राजच्छशां षः।

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(*vraścabhrasjasṛjamṛjayajarājabhrāja-cchaśāṁ ṣaḥ*)

For example: *vrasc-tum* > *vrac-tum* (A 8.2.29 [543]) > *vraṣ-tum* > *vraṣṭum* (A 8.4.41 [574]), *bhrasj-tum* > ... *brhaṣṭum, sṛj-tum* > *sraj-tum* (A 6.1.58 [393]) > *sraj-tum* (A 6.1.77 [125]) > *sraṣ-tum* > *sraṣṭum, mārj-tum* (A 7.2.114 [415]) > *mārṣ-tum* > *mārṣṭum, yaj-tum* > ... *yaṣṭum, rāj-tum* > ... *rāṣṭum, bhrāj-tum* > ... *bhrāṣṭum, prach-tum* > *praṣ-tum* > *praṣṭum-* ' to ask', *viś-tum* > *veś-tum* (A 7.3.86 [127]) > *veṣ-tum* > *veṣṭum* ' to enter'.

545 Voiced aspirated *bh gh ḍh dh* (*bhaṣ*) replace *b g ḍ d* (*baśaḥ*) of a syllable (*ekācaḥ*) that ends in a voiced aspirated stop (*jhaṣantasya*), if it is followed by *s, dhv* (*sdhvoḥ*) or occurs at a pada boundary:

A 8.2.37: **एकाचो वशो भष् झषन्तस्य स्ध्वोः (अन्ते च)**

(*ekāco baśo bhaṣ jhaṣantasya sdhvoḥ* [*ante ca* 29])

For example: *bodh-sya-te* (A 7.3.86 [127]) > *bhodh-sya-te* > *bhotsyate* (A 8.4.55 [578]) 'will awaken, perceive (3sg. fut.)', *goh-sya-ti* > *goḍh-sya-ti* (A 8.2.31 [544]) > *ghoḍh-sya-ti* > *ghok-sya-ti* (A 8.2.41 [548]) > *ghokṣyati* (A 8.3.59 [563]) 'will hide', *doh-sya-ti* > *dogh-sya-ti* (A 8.2.32 [544]) > *dhogh-sya-ti* > *dhogh-ṣya-ti* > *dhokṣyati* (A 8.4.55) 'will milk (3sg. fut.)', *abudh-s-dhvam* (2pl. aor. mid.) > *abudh-dhvam* (A 8.2.26 [543]) > *abhudh-dhvam* > *abhuddhvam* (A 8.4.53 [577]), *-budh-s* > *-budh* (A 6.1.68 [404]) > *-bhudh* > *-bhud* (A 8.2.39 [546]) > (optionally) *-bhut* (A 8.4.56 [578]) 'one who awakens' (e.g., *uṣarbhut* 'who awakens at dawn'), *adoh-t* > *adoh* > *adogh* > *adhogh* > *adhog* (A 8.2.39) > (optionally) *adhok* (A 8.4.56) 'milked (3sg. impfct.)'.

The *d-* of *dadh* (*dadhaḥ*) 'put' is replaced by the corresponding aspirate not only before *s, dhv* but also before *t, th* (*tathoś ca*):

A 8.2.38: **दधस्तथोश्च।** (*dadhas tathoś ca*)

For example: *dhā-se* (2sg. pres. mid.) > ... *dhā-dhā-se* (A 6.1.10

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[382]) > ... *da-dhā-se* (A 7.4.59, 8.4.54 [383, 577]) > *dadh-se* (A 6.4.112 [456]) > *dhaḍh-se* > *dhatse* (A 8.4.55), *dhā-dhvam* (2pl.) > ... *dadh-dhvam* > *dhadh-dhvam* > *dhaddhvam* (A 8.4.53), *dhā-tas* (3du. pres. act.) >... *dadh-tas* > *dhadh-tas* > *dhattas* (A 8.4.55), *dhā-thas* (2du.) >... *dadh-thas* > *dhadh-thas* > *dhatthas*.

546 Consonants other than semivowels and nasal stops (*jhalām*) are replaced by voiced unaspirated stops (*jaśaḥ*) in pada-final position:

A 8.2.39: **झलां जशोऽन्ते।** (*jhalāṁ jaśo'nte*)

For example: *vāk* (A 8.2.30 [544]) > *vāg*, *-bhudh* (A 8.2.37 [545]) > *-bhud*, *amārṣ* (see 542) > *amārḍ*.

547 *dh* (*dhaḥ*) substitutes for *t* and *th* (*tathoḥ*) following a voiced aspirated stop (*jhaṣaḥ*) except after the *dh* of *dhā* 'put' (*adhaḥ*: see A 8.2.38 [545]):

A 8.2.40: **झषस्तथोर्धोऽधः।** (*jhaṣas tathor dho'dhaḥ*)

For example: *labh-tum* > *labh-dhum* > *labdhum* (A 8.4.53 [577]) 'to gain', *dogh-tum* (A 8.2.32 [544]) > *dogh-dhum* > *dogdhum*.

548 *k* (*kaḥ*) replaces *ṣ* and *ḍh* (*ṣaḍhoḥ*) before *s* (*si*):

A 8.2.41: **षढोः कः सि।** (*ṣaḍhoḥ kaḥ si*)

For example: *dveṣ-si* (A 7.3.86 [127]) > *dvek-si* > *dvek-ṣi* (A 8.3.59 [563]) 'you hate', *goḥ-sya-ti* > *goḍh-sya-ti* (A 8.2.31 [544]) > *ghoḍh-sya-ti* (A 8.2.37 [545]) > *ghok-sya-ti* > *ghokṣyati*.

549 The *t*- of niṣṭhā affixes (*niṣṭhātaḥ*: A 1.1.26 [66]) is subject to replacement under various conditions. According to

A 8.2.42: **रदाभ्यां निष्ठातो नः पूर्वस्य च दः।**

(*radābhyāṁ niṣṭhāto naḥ pūrvasya ca daḥ*)

A 8.2.43: **संयोगादेरातो धातोर्यण्वतः।** (*saṁyogāder āto dhātor yaṇvataḥ*)

after *r* and *d* (*radābhyām*), *t*- is replaced by *n*- (*naḥ*), which also substitutes for a *d* (*daḥ*) that precedes (*pūrvasya*) the original *t*-; and the replacement of *t*- by *n*- takes effect after a verb (*dhātoḥ*) in *-ā* (*ātaḥ*), if the verb begins with a cluster

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(*saṁyogādeḥ*) and contains a semivowel (*yaṇvataḥ*). In addition, the substitution applies after verbs of the subgroup that begins with *lū* (*lvādibhyaḥ*: 165) as well as verbs marked with *o* (*oditaḥ* [abl. sg.]):

A 8.2.44: ल्वादिभ्यः। (*lvādibhyaḥ*)

A 8.2.45: ओदितश्च। (*oditaś ca*)

For example: *stṝ-ta* > *stīr-ta* (A 7.1.100 [423]) > *stīr-na* > *stīr-ṇa* (A 8.2.77 [552]) > *stīrṇa* (A 8.4.1 [570]) 'strewn', *bhid-ta* > *bhinna* 'split', *glā-ta* > *glāna* 'grown tired', *lū-ta* > *lūna* 'cut', *svi-ta* (base *ṭuośvi* 'swell') > *śui-ta* (A 6.1.15 [388]) > *śu-ta* (A 6.1.108 [533]) > *śū-ta* (A 6.4.2 [421]) > *śūna*.

Whether or not the *t*- of a niṣṭhā suffix is replaced by *n*- can also be connected with semantic differences. For example, *dyūta* 'gambling' (A 3.3.114 [291]) has *-ta*, but *paridyūna* 'played out, wasted away, grief stricken' has *-na*. Accordingly,

A 8.2.49: दिवोऽविजिगीषायाम्। (*divo'vijigīṣāyām*)

provides that the substitution applies after *div* (*divaḥ*) used in a meaning other than wishing to win (*avijigīṣāyām*).

Moreover, particular verbs are followed by suffixes with *k*-; *v*-; *m*- instead of *t*-; as in *śuṣka* 'dry', *pakva* 'cooked', *kṣāma* 'thin, emaciated'. According to

A 8.2.51: शुषः कः। (*śuṣaḥ kaḥ*)

A 8.2.52: पचो वः। (*paco vaḥ*)

A 8.2.53: क्षायो मः। (*kṣāyo maḥ*)

the *t*- of a niṣṭhā affix is replaced by *k* after *śuṣ* (*śuṣaḥ*), by *v* after *pac* (*pacaḥ*), and by *m* after *kṣai* (*kṣāyaḥ*).

550 The following sūtras state substitutions in pada-final position for consonants of verbal bases:

A 8.2.62: क्विन्प्रत्ययस्य कुः। (*kvinpratyayasya kuḥ*)

A 8.2.64: मो नो धातोः (पदस्य) (*mo no dhātoḥ* [*padasya* 8.1.16])

The final consonant of a derivate with *kvin* (*kvinpratyayasya*:

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A 3.2.58-59 [295]) is replaced by a velar stop (*kuḥ*) and *-m* (*maḥ*) of a verb (*dhātoḥ*) is replaced by *na* (*naḥ*). For example: *ghṛtaspṛś* > *ghṛtaspṛk* 'one who touches ghee', *praśam-s* > *praśam* (A 6.1.68 [404]) > *praśām* (A 6.4.15 [422]) > *praśān* 'calm'. The substitution of *-n* for *-m* of a verb also applies before *m-* and *v-* (*mvoḥ*) of suffixes, as in *aganma* (Vedic Ipl. aor.) 'we have gone' (< *agam-ma*), *aganva* (Idu. < *agam-va*):

A 8.2.65: म्वोश्च। (*mvoś ca*)

551 *r* marked with *u* (*ruḥ*) --- represented here by *R* --- generally substitutes for the final sound of a pada that ends with *s* and for the *-ṣ* of *sajuṣ* 'associated with, companion' in pada-final position:

A 8.2.66: ससजुषो रुः। (*sasajuṣo ruḥ*)

On the other hand, in pada-final position *d* replaces the *-s* of the affix *vasu* (A 3.2.107-108 [232]) and of the verbs *srans* 'fall', *dhvans* 'disappear, perish', as well as the *-h* of *anaḍuh* 'ox':

A 8.2.72: वसुस्रंसुध्वंस्वनडुहां दः। (*vasusraṁsu-dhvaṁsvanaḍuhāṁ daḥ*)

In addition, *d* replaces the final *s* of a verbal pada where this sound originally is followed by *tip* (*tipi*), unless the verb is *as* 'be' (*anasteḥ*); and where the ending in question is *sip* (*sipi*), *R* (*ruḥ*) and *d* optionally (*vā*) replace not only *-s* but also *-d* (*daḥ*) of a verb (*dhātoḥ*):

A 8.2.73: तिप्यनस्तेः। (*tipy anasteḥ*)

A 8.2.74: सिपि धातो रुर्वा। (*sipi dhāto rur vā*)

A 8.2.75: दश्च। (*daś ca*)

For example: *agnis* > *agnir* (as in *agnir atra* 'there is fire here'), *vāyus* > *vāyur* 'wind, Vāyu', *sajuṣ-s* > *sajuṣ* (A 6.1.68 [404]) > *sajur*; *sedivas-bhyām* (A 1.4.17 [75]) > *sedivadbhyām*, *anaḍuh-bhyām* > *anaḍudbhyām*, *aśās-t* > *aśās* > *aśād* > (optionally) *aśāt* (A 8.4.56 [578]) 'instructed, commanded (3sg. impfct.)', *aśās-s* > *aśās* > *aśād* > *aśāt*, *aśās-s* >... *aśār* : *aśāt*

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tvam, aśās tvam (A 8.4.55, 8.3.15, 34 [578, 557, 561]) 'you instructed, commanded', *abhinad-s* > *abhinad* > *abhinad* / *abhinar*.

552 A long vowel (*dīrghaḥ*) replaces penultimate (*upadhāyāḥ*) *-i-*, *-u-*, *-ṛ-*, and *-ḷ-* (*ikaḥ*) of a verb (*dhātoḥ*) that ends with *-r* or *-v* (*rvoḥ*) in pada- final position and, in the interior of a pada, if *-r* or *-v* is followed by a consonant (*hali*):

A 8.2.76: **र्वोरुपधाया दीर्घ इकः।** (*rvor upadhāyā dīrgha ikaḥ* [*dhātoḥ* 74 *padasya* 8.1.16])

A 8.2.77: **हलि च।** (*hali ca*)

Long-vowel replacement also applies to *i u ṛ ḷ* followed by *r* or *v* in penultimate position (*upadhāyām*) before a consonant within a verb:

A 8.2.78: **उपधायाञ्च।** (*upadhāyāñ ca*)

For example: *gir-s* > *gir* (A 6.1.68 [404]) > *gīr* 'voice, speech', *dhur-s* > *dhur* > *dhūr* 'yoke', *stīr-na* (A 8.2.42 [549]) > *stīr-na* > *stīrṇa*, *div-ya-ti* > *dīvyati* 'gambles', *kirt-i* (A 7.1.101 [423]) > *kīrt-i* 'praising, relating', *murch-a-ti* > *mūrchati* 'is becoming senseless'.

In *dhurya* (A 4.4.77 [340]), *kuryāt* (3sg. opt. < *kuru-yā-t*: A 6.4.109-110 [455]), *churyāt* (3sg. prec. of *chur* 'cut'), the conditions are met for lengthening by A 8.2.77, but this should not take effect. Hence,

A 8.2.79: **न भकुर्छुराम्।** (*na bhakurchurām*)

provides that long-vowel substitution does not (*na*) apply to a vowel of a bha element (A 1.4.18 [75]) or to the vowel of *kur*, *chur*.

553 At the stage where *adas* 'that' (*adasaḥ*) does not end in *s* (*aseḥ*), the vowel that follows its *-d-* (*dāt*) is replaced by an *u*-vowel (*u*), and *m* (*maḥ*) replaces *d* (*daḥ*). In addition, *ī* (*īt*) substitutes for *e* (*etaḥ*) following *d* in the plural (*bahu-vacane*) of this pronominal:

A 8.2.80: **अदसोऽसेर्दादु दो मः।** (*adaso'ser dād u do maḥ*)

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A 8.2.81: **एत ईद् बहुवचने।** (*eta īd bahuvacane*)

For example: *adas-au* > *adaa-au* (A 7.2.102 [476]) > *ada-au* (A 6.1.97 [531]) > *adau* (A 6.1.88 [529]) > *amū* (nom.-acc. du.), *adas-as* > *adaa-as* > *ada-as* > *ada-ī* (A 7.1.17 [492]) > *ade* (A 6.1.87 [528]) > *amī* (nom. pl. masc.), *adas-am* > *adaa-am* > *ada-am* > *adam* (A 6.1.107 [533]) > *amum* (acc. sg. masc.), *adas-as* > *adaa-as* > *ada-as* > *adās* (A 6.1.102 [532]) > *adān* (A 6.1.103) > *amūn* (acc. pl. masc.), *adas-ā* > *adaa-ā* > *ada-ā* > *amu-ā* > *amunā* (instr. sg. masc.-nt.: A 7.3.120, 8.2.3 [497, 538]).

554 Vocative singular forms such as *goman, sedivan,* from bases with *matup* and *vasu* (A 5.2.94, 3.2.107-108 [346, 232]), are derived from *gomat-s, sedivas-s,* with deletion of the ending *su* (A 6.1.68 [404]): *gomat-s* > *gomat* > *gomant* (A 7.1.70 [488]) > *goman* (A 8.2.23 [542]), *sedivas-s* > *sedivas* > *sedivans* > *sedivan.* In order to account for vocative forms like *marutva* (before a vowel such as the *i-* of *iha* 'here'), *marutvaḥ* '(Indra) accompanied by the Maruts', *dīdivaḥ, dīdivo* 'shining, flaming (Agni)' in Vedic usage (*chandasi*), Pāṇini lets *-R* (*ru*) replace the *-n* of a pada that contains *matup* or *vasu* (*matuvasoḥ*) originally followed by a sambuddhi ending *su* (*sambuddhau*: A 2.3.49 [68]):

A 8.3.1: **मतुवसो रु सम्बुद्धौ छन्दसि।** (*matuvaso ru sambuddhau chandasi*)

marutvan > *marutvaR* > *marutvay* (A 8.3.17[557]) > *marutva* (A 8.3.19 [558]), *marutvan* > *marutvaR* > *marutvaḥ* (A 8.3.15 [557]), *dīdivan* > *dīdivaR* > *dīdivaḥ, dīdivan* > *dīdivaR* > *dīdivaü* (A 6.1.113 [525]) > *dīdivo* (A 6.1.87 [528]).

555 A series of other sūtras lets *-R* replace the final sound of a pada when it is in close junction (*saṁhitāyām*: A 1.4.109 [42]) with a following pada. Concurrently, the vowel that precedes (*pūrvasya*) the final consonant is subject to operations as provided for in:

A 8.3.2: **अत्रानुनासिकः पूर्वस्य तु वा।** (*atrānunasikaḥ pūrvasya tu vā*)

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A 8.3.3: **आतोऽटि नित्यम्।** (*āto'ṭi nityam*)

A 8.3.4: **अ[न]नुनासिकात्परोऽनुस्वारः।** (*a[na]-nunāsikāt paro'nusvāraḥ,* see 585)

According to the first two sūtras, when *R*-substitution takes place as stated in following rules (*atra* 'here'), a nasalized vowel (*anunāsikaḥ*: A 1.1.8 [39]) replaces the preceding (*pūrvasya*) vowel, optionally (*vā*) in all instances except where the vowel in question is *ā* (*ātaḥ*) and the original final consonant occurs before a vowel, *h,* or a semivowel other than *l* (*aṭi*), in which case *ā* is obligatorily (*nityam*) replaced by its nasal counterpart. If the penultimate vowel is not replaced by its nasalized counterpart, the nasal offglide called anusvāra (*anusvāraḥ*: *ṁ*) follows (*paraḥ*) the unnasalized vowel (*ananunāsikāt*). The following are some of the sūtras of the section which A 8.3.2-4 head:

A 8.3.5: **समः सुटि (संहितायाम्)**

(*samaḥ suṭi* [*saṁhitāyām* 8.2.108])

A 8.3.7: **नश्छव्यप्रशान्(अम्परे)** (*naś chavy apraśān* [*ampare* 6])

A 8.3.8: **उभयथर्क्षु।** (*ubhayatharkṣu*)

A 8.3.9: **दीर्घादटि समानपादे।** (*dīrghād aṭi samānapāde*)

Before the augment *suṭ* (*suṭi*), the *-m* of *sam* is replaced by *-R,* which also substitutes for the *-n* of a pada other than *praśān* 'calm' (*apraśān*) before *ch ṭh th c ṭ t* (*chavi*), if these are followed by a vowel, *h,* a semivowel, or a nasal (*ampare*). In the contexts covered by A 8.3.7, one has both *-n* and *-R* (*ubhayathā* 'both ways') in Vedic ṛc's (*ṛkṣu*), where *-R* optionally replaces *-n* after a long vowel (*dīrghāt*), if there follows a vowel, *h,* or a semivowel other than *l* (*aṭi*) in the same verse section (*samānapāde*). For example: *sam skaroti* (A 6.1.137-138 [527]) > *saṁR skaroti* (with nasalized *a* [*aṁ*]) > *saṁḥ skaroti* (A 8.3.15 [557]) > *saṁs skaroti* (A 8.3.34 [561]), *sam skaroti* > *saṁR skaroti* (with anusvāra [*ṁ*] after *a*) > ...

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saṁs skaroti; bhavān cinoti › *bhavāṁR / bhavāṁR cinoti* › *bhavāṁṇ / bhavāṁṇ cinoti* › *bhavāṁṣ / bhavāṁs cinoti* › *bhavāṁṣ / bhavāṁṣ cinoti* (A 8.4.40 [574]) 'you are heaping up, gathering'; *asmān ca* › *asmāñ ca* (A 8.4.40), *tān ca* › *tāṁR ca* › *tāṁṇ ca* › *tāṁṣ ca* › *tāṁṣ ca* (see (126) [616]), *raśmīn iva* › *raśmīṁR iva* 'like reins', *adhvarān úpa* › *adhvarāṁR úpa* › *adhvarāṁy úpa* › *adhvarāṁ úpa* '... sacrificial rites' (RV 8.35.21a: रश्मीँ रिव यच्छतमध्वराँ उपा [*raśmīṁr iva yaccha-tam adhvarāṁ úpa*] '(Aśvins), draw up the sacrificial rites as (a charioteer does) the reins').

556 A 8.3.13: **ढो ढे लोपः।** (*ḍho ḍhe lopaḥ*)

A 8.3.14: **रो रि** (*ro ri*)

let zero (*lopaḥ*) replace *ḍh* (*ḍhaḥ*) followed by *ḍh* (*ḍhe*) and *r* (*raḥ*) followed by *r* (*ri*); see 523, 538.

557 Pada-final *-r* (*raḥ*), whether it is an original *-r* or *-R* which has substituted for another consonant (A 8.2.66, 74-75, 8.3.5-9 [551, 555]), is replaced by *ḥ* (*visarjanīyaḥ*) before voiceless consonants (*khar*) and in prepause position (*kharavasānayoḥ*: A 1.4.110 [42]):

A 8.3.15: **खरवसानयोर्विसर्जनीयः (रः पदस्य)**
(*kharavasānayor visarjanīyaḥ* [*raḥ* 14, *padasya* 8.1.16])

When followed by voiceless consonants, *-ḥ* is subject to additional replacements; see 561. Contrary to what A 8.3.15 allows in general,

A 8.3.16: **रोः सुपि** (*roḥ supi*)

restricts where *-ḥ* may occur as a replacement at a pada boundary before a nominal ending (*supi*: A 1.4.17 [75]): only *-R* (*roḥ*) is replaced by *-ḥ* in this context. For example, *yaśas-su* › *yaśaR-su* › *yaśaḥsu* (loc.pl.) 'fames', but *gir-su* › *gīr-su* (A 8.2.76 [552]) › *gīṛṣu* (A 8.3.59 [563]), *dhur-su* › *dhūr-su* › *dhūṛṣu*, with '*-r-*.

Before a voiced segment (*aśi*), on the other hand, *-R* is

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replaced by *-y* (*yaḥ*) if it is preceded by *bho, bhago* ('sir'), *agho* ('sinful one') --- all parts of terms of address --- or is preceded by an *a*-vowel (*bhobhagoaghoapūrvasya*):

A 8.3.17: भोभगोअघोअपूर्वस्य योऽशि। (*bhobhago-aghoapūrvasya yo'śi*)

For example: *bhoR* > *bhoy, bhagoR* > *bhagoy, aghoR* > *aghoy, puruṣaR* > *puruṣay* 'man (nom. sg.)', *puruṣāR* > *puruṣāy* (nom. pl.). A 6.1.113-114 (525) apply to let *-u* substitute for *-R* preceded by short *a* and followed by short *a* or a voiced consonant, so that, except for the vocatives *bhoR* and so on, *-y* replaces *-R* by A 8.3.17 after *-ā-*.

558 Pada-final *-v* and *-y* (*vyoḥ*) are subject to various operations before voiced segments (*aśi*), depending on the dialect in question. According to Śākaṭāyana (*śākaṭāyanasya* [*matena*]), each of these sounds is replaced by one that has a slighter articulatory effort (*laghuprayatnataraḥ*), that is, by an attenuated glide:

A 8.3.18: व्योर्लघुप्रयत्नतरःशाकटायनस्य(अशि) (*vyor laghuprayatnataraḥ śākaṭāyanasya* [*aśi* 17])

Thus, in the dialect described by Śākaṭāyana, one has the attenuated glides $^{-}y\,^{-}v$ instead of *-y -v* found elsewhere. In the dialect of Śākalya (*śākalyasya*), on the other hand, *-y -v* are deleted (*lopaḥ*), and according to Gārgya (*gārgyasya*), *-y* is dropped after *-o-* (*otaḥ*):

A 8.3.19: लोपः शाकल्यस्य। (*lopaḥ śākalyasya*)

A 8.3.20: ओतो गार्ग्यस्य। (*oto gārgyasya*)

Such variation holds when vowels follow, since, as provided for in

A 8.3.22: हलि सर्वेषाम्। (*hali sarveṣām*)

all (*sarveṣām* [*matena*]) agree that *-y* and *-v* are deleted before a consonant (*hali*). For example, there are dialectal variants *kay, ka*^{y}, and *ka* (nom. sg. masc.) 'who?' followed by *āste* 'is seated': *kas āste* > *kaR āste* (A 8.2.66 [551]) > *kay*

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āste (A 8.3.17 [557]); *kay āste* > *ka^{y} āste, ka āste*. Similarly, one has *amātyāv, amātyā^{r}*, and *amātyā* 'two ministers' before *atra* 'here': *amātyau atra* > *amātyāv atra* (A 6.1.78 [524]); *amātyāv atra* > *amātyā^{r} atra, amātyā atra*. And there are variants *bhoy*(< *bhoR*: A 8.3.17), *bho^{y}*, *bho* before vowels. But before consonants, one does not have such variation; e.g., *puruṣā gacchanti* 'the men are going': *puruṣās* > *puruṣāR* > *puruṣāy* > *puruṣā*.

559 A pada in *-m* (*maḥ* [*padasya*: A 8.1.16]) has its final sound replaced by the nasal off-glide *-ṁ* (*anusvāraḥ*), which also substitutes for either *m* or *n* (*naś ca*) that is not pada-final (*apadāntasya*), provided a consonant other than a semivowel or a nasal follows (*jhali*):

A 8.3.23: **मोऽनुस्वारः।** (*mo'nusvāraḥ*)

A 8.3.24: **नश्चापदान्तस्य झलि।** (*naś cāpadāntasya jhali*)

For example: *odanam* > *odanaṁ* (*odanaṁ pacati*: (19b) [230, 244]), *chandāns-i* (A 7.1.72, 6.4.10 [488, 469]) > *chandāṁsi*.

Before *h-* (*he*) followed by *m* (*mapare*) and *n* (*napare*), *-m* shows optional assimilation to *m* and *n*, as in *katham* (*kathaṁ*) *hmalayati* 'how does ... shake?', *kin* (*kiṁ*) *hnute* 'what is ... hiding?'. This is provided for by letting *m* (*maḥ*) and *n* (*naḥ*) optionally (*vā*) occur in place of *m* in these contexts:

A 8.3.26: **हे मपरे वा (मः)** (*he mapare vā* [*maḥ* 25])

A 8.3.27: **नपरे नः।** (*napare naḥ*)

560 In particular contexts, certain transitional sounds occur optionally (*vā*). According to

A 8.3.28: **ङ्णोः कुक् टुक् शरि।** (*ṅṇoḥ kuk ṭuk śari* [*vā* 26])

A 8.3.29: **डः सि धुट्।** (*ḍaḥ si dhuṭ*)

A 8.3.30: **नश्च।** (*naś ca*)

A 8.3.31: **शि तुक्।** (*śi tuk*)

the final augments *kuk, ṭuk* (A 1.1.46 [17]) are respectively

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added to padas in *-ṁ* and *-ṇ* (*ṁṇoḥ*) before a voiceless spirant (*śari*); the initial augment *dhuṭ* is added to *s-* after a pada in *-ḍ* and also after one that ends with *-n* (*naḥ*), which takes the final augment *tuk* before *ś* (*śi*). For example, *k* is optionally added to *prāṁ* 'facing east', *ṭ* to *sugaṇ* 'one who counts well', before *ś-* (e.g., *śete* 'is lying'), *ṣ-* (*ṣaṣṭhaḥ* 'sixth one'), *s-* (*sīdati* 'sits down'): *prāṁ śete* › *prāṅk śete* › *prāṅk chete* (A 8.4.63 [582]), *prāṁ ṣaṣṭhaḥ* › *prāṅk ṣaṣṭhaḥ*, *prāṁ sīdati* › *prāṅk sīdati*, *sugaṇ śete* › *sugaṇṭ śete*› *sugaṇṭ chete*, *sugaṇ ṣaṣṭhaḥ* › *sugaṇṭ ṣaṣṭhaḥ*, *sugaṇ sīdati* › *sugaṇṭ sīdati*. After *amārḍ* (< ... *amārj-t*: 542, 546), *sāye* 'in the evening' optionally takes the initial augment *dhuṭ*: *amārḍ sāye* › *amārḍ dhsāye* › *amāṛṭ tsāye* (A 8.4.55 [578]). *sīdatu* (3sg. imper.) 'please sit' optionally takes the same augment after *bhavān* 'you': *bhavān sīdatu* › *bhavān dhsīdatu* › *bhavān tsīdatu*. And *tuk* is optionally added to *bhavān* before *śete*: *bhavān śete* › *bhavānt śete* › *bhavānt chete*.

Some transitional segments are obligatory. Thus, according to

A 8.3.32: **ङमो ह्रस्वादचि ङमुण्नित्यम्।** (*ṅamo hrasvād aci ṅamuṇ nityam*)

ṅ ṇ n are obligatorily (*nityam*) added as initial augments (*ṅamuṭ*) to padas that begin with a vowel (*aci*) if these follow padas that end with *ṅ ṇ n* (*ṅamaḥ*) preceded by a short vowel (*hrasvāt*). For example: *pratyaṁ āste* › *pratyaṅ ṅāste* '... is seated facing west', *tasmin iti* › *tasmin niti* (A 1.1.66 [90]).

561 Visarjanīya (*visarjanīyasya*: A 8.3.15 [557]) in close junction with a voiceless consonant is generally replaced by *s* (*saḥ*):

A 8.3.34: **विसर्जनीयस्य सः।** (*visarjanīyasya saḥ*)

This *s* is then subject to assimilatory substitutions before palatals and retroflex sounds (A 8.4.40-41 [574]). For example, the *-s* of *devadattas* (< *devadattaḥ*) remains before a dental such as the *t-* of *tatra* 'there' but is replaced by *-ś* before a palatal such as the *c-* of *cinoti* 'is gathering, heaping

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up'.

Contrary to what A 8.3.34 allows, *-ḥ* is retained before a voiceless consonant that is followed by a spirant, as in *vāsaḥ kṣaumam* 'the garment is silken'. This is accounted for by providing, in

A 8.3.35: शर्परे वसिर्जनीयः। (*śarpare visarjanīyaḥ*)

that visarjanīya itself substitutes for visarjanīya before a voiceless consonant followed by a voiceless spirant (*śarpare*). In addition, *-ḥ* optionally (*vā*) occurs, again as a substitute for *-ḥ*, before a voiceless spirant, as in *devadattaḥ śete, devadattaś* (< *devadattas*) *śete*:

A 8.3.36: वा शरि। (*vā śari*)

Further, before velar and labial stops (*kupvoḥ*), respectively, the velar and labial spirants *x̯k, x̯p* (*x̯k x̯pau*) occur as well as (*ca*) visarjanīya:

A 8.3.37: कुप्वोः ᳵकᳵपौ च। (*kupvoḥ x̯kx̯pau ca*)

For example: *devadattax̯k / devadattaḥ krośati* 'Devadatta is crying out', *devadattax̯p / devadattaḥ pacati* 'Devadatta is cooking.'

562 There are instances where, contrary to A 8.3.37, *-s* and *-ṣ* occur before velar or labial stops. For example, *yaśaskalpa* 'near fame, something less than fame, something like fame', *sarpiṣkalpa* 'near butter, something less than butter, something like butter', *yajuṣkalpa* 'something less than a yajus, something like a yajus' (affix *kalpap*: A 5.3.67 [356]) have *yaśaṣ-*, *sarpiṣ-*, and *yajuṣ-*, as opposed to *yaśaḥ* and so on in examples such as *yaśaḥ / yaśax̯k karoti* 'produces fame'. Accordingly,

A 8.3.38: सोऽपदादौ (विसर्जनीयस्य कुप्वोः) (*so'padādau* [*visarjanīyasya* 34, *kupvoḥ* 37])

A 8.3.39: इणः षः। (*iṇaḥ ṣaḥ*)

let *-s* (*saḥ*) replace *-ḥ* (*visarjanīyasya*) before a velar or a labial stop unless *-ḥ* follows an *i-* *u-* or *ṛ*-vowel (*iṇaḥ*), in

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which case the substitute is *-ṣ* (*ṣaḥ*), provided that the consonant which follows *-ḥ* is not the initial of a pada (*apadādau*).

A series of additional rules accounts for cases where *-s* or *-ṣ* occurs before a velar or labial stop instead of *-ḥ*. By

A 8.3.40: **नमस्पुरसोर्गत्योः।** (*namaspurasor gatyoḥ*)

-ḥ that has substituted for the *-s* of gati elements *namas, puras* (A 1.4.67, 74 [55]) is replaced by *-ṣ*, as in *namas kartum* 'to do obeisance, honor', *puras kartum* 'to put at the fore'. According to

A 8.3.41: **इदुदुपधस्य चाप्रत्ययस्य।** (*idudupadhasya cāpratyayasya*)

replacement by *-ṣ* applies also to non-affixal (*apratyayasya*) *-ḥ* preceded by *-i-* or *-u-* (*idudupadhasya*); e.g., *āviṣkṛta* 'made clear, evident', *duṣkṛta* 'ill done, ill deed'.

On the other hand, provided there is a direct syntactic-semantic link (*sāmarthye*) between a pada with an initial velar or labial and one that ends with *-iḥ* or *-uḥ* from *-is, -us* (*isusoḥ*), the *-ḥ* of the latter is optionally (*anyatarasyām*) replaced by *-ṣ*:

A 8.3.44: **इसुसोः सामर्थ्ये (अन्यतरस्याम्)**

(*isusoḥ sāmarthye* [*antyatarasyām* 42])

For example: *sarpiṣ / sarpiḥ karoti* '... is making butter', *yajuṣ / yajuḥ karoti* '... produces a yajus'.

563 Sūtras of the section headed by A 8.3.55 (105) provide for a retroflex consonant to replace *s* that is not the final sound of a pada, and A 8.3.57 (107) states the major left contexts in which this substitution applies. Moreover, as provided for in

A 8.3.58: **नुम्विसर्जनीयशर्व्यवायेऽपि।**

(*numvisarjanīyaśarvyavāye'pi*)

retroflex replacement applies even if the conditioning sounds and *s* are separated (*-vyavāye'pi*) by a substitute for *num*, by *ḥ*, or by *ś ṣ s* (*śar*).

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A 8.3.59: **आदेशप्रत्यययोः।** (*ādeśapratyayayoḥ*)

lets retroflex *ṣ* substitute for *s* which is a replacement for verb-initial *ṣ-* (A 6.1.64 [135]) and for *s* of an affix (*ādeśa-pratyayayoḥ*). The *-s-* of *su-svāp-a* (3sg. pfct.) 'slept' and *agni-su* (loc. pl.) 'fires', *vāyu-su* 'winds', *kartṛ-su* 'doers, agents', *vāg-su* 'voices, speeches' directly follow the sounds that condition retroflex substitution to give *suṣvāpa, agniṣu, vāyuṣu, kartṛṣu, vāg-ṣu* (> *vākṣu*). The *-s-* of *sarpīṁs-i* (nom.-acc .pl. < *sarpīns-i*: A 8.3.24 [559]) 'butters', *yajūṁs-i* 'yajus formulae', *sarpiḥ-su* (loc. pl.: A 8.3.16, 36 [557, 561]), *yajuḥ-su, sarpis-su, yajussu* is separated from the conditioning sounds by *ṁ, ḥ,* and *ṣ,* but retroflexion still applies: *sarpīṁs-i* > *sarpīṁṣi, yajūṁs-i* > *yajūṁṣi, sarpiḥ-su* > *sarpiḥṣu, yajuḥ-su* > *yajuḥṣu, sarpis-su* > *sarpis-ṣu* > *sarpiṣṣu* (A 8.4.41 [574]), *yajus-su* > *yajus-ṣu* > *yajuṣṣu.*

Although *-s-* in *śis-ta* (< *śās-ta-*: A 6.4.34 [447]), *us-ita* (< *...vas-ita*: A 6.1.15 [388]) 'one who has remained', *gha-ghs-atus* (< *... ghas-atus*: A 2.4.40, 6.4.98 [380, 454]) 'they two ate' is neither a substitute for *ṣ* nor part of an affix, so that A 8.3.59 cannot apply to replace it with *ṣ,* retroflex substitution should indeed apply here: *śiṣṭa, uṣita, jakṣatuḥ.* Accordingly,

A 8.3.60: **शासिवसिघसीनाञ्च।** (*śāsivasighasīnāñ ca*)

lets *ṣ* also replace the *s* of *śās, vas,* and *ghas* when it occurs after a sound of the set specified in A 8.3.57: *śis-ta* > *śiṣ-ta* > *śiṣṭa* (A 8.4.41), *us-ita* > *uṣita, gha-ghs-atus* > *jha-ghs-atus* (A 7.4.62 [383]) > *jha-ghṣ-atus* > *ja-ghṣ-atus* (A 8.4.54 [577]) > *jakṣatus* (A 8.4.55 [578]).

On the other hand, A 8.3.59 would allow retroflex subtitution in some instances where this should not apply. For example *ṣiñ* 'bind', *ṣuñ* 'press juice out of something', are taught with *ṣ-* to show that they are subject to retroflex replacement, as in *siṣāya, suṣāva* (3sg. pfct.), but the desideratives of these verbs are *sisīṣa* and *susūṣa,* not

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**siṣīṣa* and **suṣūṣa*. Indeed, of verbs with forms that contain vowels of the set alluded to in A 8.3.57, only *ṣṭuñ* 'praise' and derived verbs in *-ṇi* regularly have *-ṣ-* following an abhyāsa syllable in desideratives with *-ṣa-*; e.g., *tuṣṭūṣa* 'wish to praise', *siṣecayiṣa* 'wish to have ... irrigate'. Hence,

A 8.3.61: **स्तौतिण्योरेव षण्यभ्यासात्।** (*stautiṇyor eva ṣaṇy abhyāsāt*)

provides that the *-s-* of *stu* and derived verbs in *-ṇi* (*stautiṇyoḥ*) alone (*eva*) is replaced by *-ṣ-* after an abhyāsa syllable (*abhyāsāt*: A 6.1.4 [52]) in forms where *ṣa* (*ṣaṇi*), with *-ṣ-*, follows the verb. This sūtras specifies that the desiderative suffix have the shape *-ṣa-*, so that it does not exclude retroflexion in derivates such as *suṣupsa-* 'wish to sleep'.

564 The replacement of *s-* by *ṣ-* in some verbs is conditioned by a preceding preverb (*upasargāt*: A 1.4.59 [55]). For example, according to

A 8.3.65: **उपसर्गात्सुनोतिसुवतिस्यतिस्तौतिस्तोभति-स्थासेनयसेधसिचसञ्जस्वञ्जाम्।**

(*upasargāt sunotisuvatisyatistautistobhati-sthāsenayasedhasicasañjasvañjām*)

A 8.3.66: **सदिरप्रतेः।** (*sadir aprateḥ*)

retroflex substitution applies to the *s-* of *su* (*sunoti*) 'press juice out of something', *sū* (*suvati*) 'impel', *so* (*syati*) 'finish, terminate, conclude', *stu* (*stauti*) 'praise', *stubh* (*stobhati*) 'praise', 'stop', *sthā* 'be in place', *seni* (*senaya-*) 'march with an army', *sedh* 'repel', *sic* 'pour, irrigate', *sanj* 'stick', *svanj* 'embrace' after a preverb that ends in a vowel of the set specified in A 8.3.57 (107), and to *sad* 'sit' after any such preverb except *prati* (*aprateḥ*). For example: *pari sunoti* > *pari ṣunoti* > *pari ṣuṇoti* (A 8.4.2 [570]) 'presses round', *abhi suvati* > *abhi ṣuvati* 'impels against', *abhi sthāsyati* > *abhi ṣthāsyati* > *abhi ṣṭhāsyati* 'will stand against, defeat', *ni sīdati* > *ni ṣīdati* 'sits down'. By

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A 8.3.67: स्तम्भेः। (*stambheḥ*)

A 8.3.68: अवाच्चालम्बनाविदूर्ययोः। (*avāc cālambanāvidūryayoḥ*)

ṣ- substitutes for the *s*- of *stanbh* not only after a preverb that meets the phonological conditions given earlier but also (*ca*) after *ava,* if the verb is used in the sense of 'support' or 'being set not far off' (*ālambanāvidūryayoḥ*); e.g., *vi stabhnāti* > *vi ṣtabhnāti* > *vi ṣṭabhnāti* (A 8.4.41) 'props apart', *avaṣṭabdha* 'supported on, resting on, nearby'. And

A 8.3.70: परिनिविभ्यः सेवसितसयसिवुसहसुट्-स्तुस्वञ्जाम् (*parinivibhyaḥ sevasita-sayasivusahasuṭstusvañjām*)

provides that retroflex replacement applies after the preverbs *pari, ni, vi* (*parinivibhyaḥ*) to the initial consonants of *siv* 'serve', *sita* 'bound', *saya* 'binding', *siv* 'sew', *sah* 'bear', the augment *suṭ* (see A 6.1.135-137 [527]), and the *s*- of *stu* 'praise', *svanj* 'embrace'; e.g., *pari ṣevate* 'serves', *viṣita* 'unbound', *pari ṣkaroti* 'prepares fully'.

565 It is necessary to account not only for sequences such as *pari ṣuṇoti, abhi ṣṭhāsyati,* in which *ṣ*- substitutes for *s*- immediately following the *-i* of the preverbs *pari* and *abhi,* but also for sequences like *pary aṣuṇot* (3sg. impfct.), *abhi taṣṭhau* (3sg. pfct.) where the initial augment *aṭ* (A 6.4.71 [238]) and an abhyāsa syllable come between the conditioning sounds and *s*-. Moreover, despite the restriction formulated in A 8.3.61 (563), one must account for desideratives like *pari ṣiṣikṣati,* with *-ṣ*- following the abhyāsa syllable, as opposed to *sisikṣati,* both from *sic* (*ṣicà*). Accordingly,

A 8.3.63: प्राक्सितादड्व्यवायेऽपि। (*prāk sitād aḍvyavāye'pi*)

A 8.3.64: स्थादिष्वभ्यासेन चाभ्यासस्य। (*sthādiṣv abhyāsena cābhyāsasya*)

provide that: retroflex substitution as formulated in

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subsequent sūtras applies, for items given before *-sita-* (*prāk sitāt*) in A 8.3.70 (564), even if the *s-* in question and the conditioning context are separated by *aṭ* (*aḍvyavāye'pi*); retroflex replacement in items starting with *sthā* (*sthādiṣu*) of A 8.3.65 applies even if *s-* and the conditioning context are separated also by an abhyāsa syllable (*abhyāsena*); and retroflexion applies also to *s* of such a syllable (*abhyāsasya*). Further, according to

A 8.3.71: **सिवादीनां वाड्व्यवायेऽपि।** (*sivādīnāṁ vāḍvyavāye'pi*)

the *s-* of *siv* and following items (*sivādīnām*), given in A 8.3.70 optionally (*vā*) undergo retroflex substitution even if the augment *aṭ* comes between such an item and the conditioning context, as in *pary aṣīvyat, pary aṣīvyat.*

566 Retroflex substitution applies also to *dh* in certain verb endings. By

A 8.3.78: **इणः षीध्वंलुङ्लिटां धोऽङ्गात्।** (*iṇaḥ ṣīdhvaṁluṅliṭāṁ dho'ṅgāt*)

A 8.3.79: **विभाषेटः।** (*vibhāṣeṭaḥ*)

the retroflex sound (*mūrdhanyaḥ*: A 8.3.55 [105]) *ḍh* (A 1.1.50 [92]) replaces *dh* (*dhaḥ*) of *-ṣīdhvam* and endings that derive from *luṅ* and *liṭ* (*ṣīdhvaṁluṅliṭām*) after a stem (*aṅgāt*: A 1.4.13 [46]) that ends with a sound denoted by *iṇ* (*iṇaḥ*: see 129-130), and this substitution is optional (*vibhāṣā*) if all other stated conditions are met and *ṣīdhv* or *dh* follows the initial augment *iṭ* (*iṭaḥ*). For example: *cyu-sīydhvam* (2pl. prec.: A 3.3.173, 3.4.78, 102 [233, 232, 401]) > *cyu-sīdhvam* (A 6.1.66 [522]) > *cyo-sīdhvam* (A 7.3.84 [127]) > *cyo-ṣīdhvam* (A 8.3.59 [563]) > *cyoṣīḍhvam* 'may you move', *acyo-s-dhvam* (2pl. aor.: A 3.2.110, 3.4.78, 3.1.44, 7.3.84, 6.4.71 [233, 232, 236, 127, 238]) > *acyo-dhvam* (A 8.2.25 [543]) > *acyoḍhvam* 'you (have) moved', *kṛ-dhve* (2pl. pfct. mid.: A 3.2.115, 3.4.78-79 [233, 232, 396]) > *kṛ-kṛ-dhve* (A 6.1.8 [382]) > *cṛ-kṛ-dhve* (A 7.4.62 [383]) > *car-kṛ-dhve* (A 7.4.66 [384]) > *ca-kṛ -dhve* (A 7.4.60) >

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cakṛḍhve 'you made for yourselves', *lū-iṣīẏdhvam* > ... *laviṣīḍhvam / laviṣīdhvam* 'may you all cut', *lū-iṣ-dhvam* >... *alaviḍhvam / alavidhvam, lū-dhvam* > ... *luluviḍhve / luluv:idhve.*

567 The *s*- of certain members of compounds also is subject to replacement by *ṣ*-. For example, according to

A 8.3.80: **समासेऽङ्गुलेः सङ्गः।** (*samāse'ṅguleḥ saṅgaḥ*)

A 8.3.83: **ज्योतिरायुषः स्तोमः।** (*jyotirāyuṣaḥ stomaḥ*)

A 8.3.84: **मातृपितृभ्यां स्वसा।** (*mātṛpitṛbhyāṁ svasā*)

saṅga 'coming together, adherence' undergoes this substitution in a compound (*samāse*) after *aṅguli*- 'finger' (*aṇguliṣaṅga* 'which sticks to the fingers'); *stoma* has its *s*- replaced by *ṣ*- when it follows *jyotis*- or *āyus*- in a compound (*jyotiṣṭoma* 'Jyotiṣṭoma rite', *āyuḥṣṭoma* 'a rite to gain long life'); and following *mātṛ*- 'mother' or *pitṛ*- 'father' in a compound, the *s*- of *svasṛ* 'sister' is subject to retroflex substitution (*mātṛ-ṣvasṛ* 'mother's sister', *pitṛṣvasṛ* 'father's sister').

568 The general heading A 8.3.55 (105) specifies that replacement by a retroflex consonant applies to a sound that is not pada-final (*apadāntasya*). Thus, although the *-s* of *agni-s* (< *agni-ḥ* < *agni-R*: A 8.3.15, 34 [557, 561]) of a string such as *agnis tatra* 'there is fire there' is an affixal sound, A 8.3.59 (563) does not apply to replace it with *-ṣ*. By the same token, the *-s* of *sarpis* 'butter' or *yajus* 'yajus formula' would not be subject to replacement by *-ṣ* before *tva* (A 5.1.119 [348]). However, it is necessary to allow this substitution in such instances in order to account for derivates such as *sarpiṣṭva* 'being butter', *yajuṣṭva* 'being a Yajus'. Hence,

A 8.3.101: **ह्रस्वात्तादौ तद्धिते।** (*hrasvāt tādau taddhite*)

provides that retroflex substitution applies to *s* after a short vowel (*hrasvāt*), if it occurs before a taddhita affix that begins with *t* (*tādau taddhite*).

Moreover, Vedic usage reflects a stage of the language at which the replacement of *s* by *ṣ* was purely phonological, so that it did indeed apply to pada-final *-s*, as in RV 10.2.4c:

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अग्निष्टद्विश्वमापृणाति ... (*agniṣ ṭád víśvam ā́ pṛṇāti* ...) 'Agni ... will fulfill all that.' Pāṇini therefore states a series of rules relative to special cases of retroflexion in Vedic. One of these, which accounts for the example given, is

A 8.3.103: **युष्मत्तत्ततक्षुःष्वन्तःपादम्**

(*yuṣmattattatakṣuḥṣv antaḥpādam*)

according to which retroflex replacement applies to *-s* followed by forms of the pronominals *yuṣmad* (2pers.), *tad* 'that' or by *tatakṣuḥ* 'they fashioned' within the same verse section (*antaḥpādam*).

569 It is also necessary, under given conditions, to disallow retroflex replacement that would obtain by A 8.3.59 (563). Thus, although the verb *sic* (*ṣicá*) 'pour, irrigate' has an *ṣ-* that is subject to retroflex substitution, as in *siṣeca*, this does not apply where a verbal pada containing *sic* is preceded by a pada such as *dadhi* 'curds' or *madhu* 'honey': *dadhi siñcati*, *madhu siñcati*. Nor does retroflex substitution apply in derivates such as *agnisāt*, with the affix *sāti* (A 5.4.52 [347]). Therefore,

A 8.3.111: **सात्पदाद्योः (न)** (*sātpadādyoḥ* [*na* 110])

provides that replacement by a retroflex does not (*na*) apply to the *ṣ-* of *sāt* or to *ṣ-* of a pada (*sātpadādyoḥ*).

In turn, A 8.3.111 would disallow replacing *s-* with *ṣ-* in instances such as *pari ṣuṇoti*, so that more specific sūtras like A 8.3.65 (564) are required, in order to let this substitution take effect in the contexts specified. On the other hand, there are even more narrow domains, in which, contrary to such rules, retroflex replacement has to be disallowed. For example, as provided for in

A 8.3.112: **सिचो यङि** (*sico yaṅi*)

the *ṣ-* of *sic* (*sicaḥ*) is not replaced by *ṣ-* if the verb occurs followed by the affix *yaṅ* (*yaṅi*: A 3.1.22 [280]), as in *pari sesicyate* 'repeatedly pours around'.

570 Another type of retroflex substitution involves replacing

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n with *ṇ*. According to

A 8.4.1: **रषाभ्यां नो णः समानपदे।** (*raṣābhyām no ṇaḥ samānapade*)

ṇ (*ṇaḥ*) occurs in place of *n* (*naḥ*) which follows *r* (including *r* that is a component of *ṛ*) or *ṣ* (*raṣābhyām*) in the same pada (*samānapade*). The conditioning sounds and *n* may be contiguous. For example, in *stīr-na* (< *stīr-na*: A 8.2.77 [552]), *muṣ-nā-ti*, one has *-n-* immediately following *-r-* and *-ṣ-*: *stīr-na* > *stīṛṇa*, *muṣ-nā-ti* > *muṣṇāti*. But this is not the case in *kar-ana*, *giri-nā*, *guru-nā*, *arkena*, *murkhena*, *gargena*, *arghena*, *darpena*, *rephena*, *garbhena*, *carman-ā*, *pary-ā-nadh-dha*, *bṛṁh-ana* (< *bṛnh-ana*: A 7.1.58, 8.3.24 439, 559]). Yet retroflexion should apply in all these instances to account for *karaṇa* 'doing', 'instrument', *giriṇā* (instr. sg.) 'mountain', *guruṇā* 'weighty', *arkeṇa* (instr. sg.) 'ray', *murkheṇa* 'fool', *gargeṇa* 'Garga', *argheṇa* 'value, price', *darpeṇa* 'pride, haughtiness', *repheṇa* 'r', *garbheṇa* 'womb, foetus', *cārmaṇā* (instr. sg.) 'hide', *paryāṇaddha* 'girded round', *bṛṁhaṇa* 'growth, strengthening'. Accordingly, retroflexion is said to occur also if *n* is separated (*-vyavāye'pi*) from the conditioning *r* or *ṣ* by a vowel or a semivowel other than *l* (*aṭ*), by a velar (*ku*) or a labial (*pu*), by the preverb *āṅ*, or by the augment *num*:

A 8.4.2: **अट्कुप्वाङ्नुम्व्यवायेऽपि।** (*aṭkupvāṅnumvyavāye'pi*)

See also A 8.4.38 (573).

571 The substitution of *ṇ* for *n* also takes effect across pada boundaries in certain instances. The following sūtras provide for this retroflexion after a first component of a compound (*pūrvapadāt*):

A 8.4.3: **पूर्वपदात्संज्ञायामगः।** (*pūrvapadāt saṃjñāyām agaḥ*)

A 8.4.7: **अह्नोऽदन्तात्।** (*ahno'dantāt*)

A 8.4.9: **पानं देशे।** (*pānaṃ deśe*)

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A 8.4.10: वा भावकरणयोः। (*vā bhāvakaraṇayoḥ*)

A 8.4.11: प्रातिपदिकान्तनुम्विभक्तिषु च।
(*prātipadikāntanumvibhaktiṣu ca*)

Following a component with *r* or *ṣ* in a compound used with reference to a particular individual person or thing (*saṁjñāyām*), *n* of a second component is replaced by *ṇ* unless the first member in question ends with *g* (*agaḥ*); e.g., *śūrpaṇakhā* (< *śūrpa-nakhā*) 'Śūrpaṇakhā' refers to a particular individual, thus called because her nails resemble a winnowing basket, but *carmanāsika* can be used of any individual whose nose is like hide; *ṛgayana* signifies a particular thing, the Ṛksaṁhitā, but it does not show retroflexion. A 8.4.7 deals with the *-n-* of *-ahna*: This is replaced by *-ṇ-* after a component in *-a* (*adantāt*), as in *aparāhṇa* 'afternoon'. The next two rules concern compounds in which the second member is *pāna*. If the compound is used with reference to a particular area (*deśe*), *-pāna* is subject to retroflex substitution, which is optional (*vā*) if this term denotes an action or instrument (*bhāvakaraṇayoḥ*: A 3.3.114, 115, 117 [291, 293]). For example, *kṣīrapāṇāḥ* (nom. pl. masc.) refers to a place whose inhabitants habitually take milk as their drink, *surāpāṇāḥ* to a place where liquor is drunk; either *kṣīrapāṇa* or *kṣīrapāna* is used with reference to the drinking of milk or a utensil used to drink milk. A 8.4.11 lets *ṇ* optionally replace: *n* which occurs as the final sound in a nominal base (*prātipadikānta*), *n* introduced as the augment *num*, and *n* which occurs as part of an ending (*vibhakti*); e.g., *māṣavāpin-au* > *māṣavāpiṇau* (nom.-acc. du. masc.) 'men who sow māṣa beans', *māṣavāpān-i* (A 7.1.72 [488]) > *māṣavāpāṇi* (nom.-acc. nt.) 'māṣa bean sowers', *māṣavāpena* > *māṣavāpeṇa* (instr. sg.) 'māṣa sowing', which alternate with *māṣavāpinau, māṣavāpāni, māṣavāpena*.

572 After a preverb (*upasargāt*) with a sound that conditions retroflexion, the *n*- of a verb with basic *ṇ*- (*ṇopadeśasya*: A 6.1.65 [135]) and linked to the preverb is replaced by *ṇ*-, whether the preverb and verb occur in a compound or not

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(*asamāse'pi* 'also elsewhere than in a compound'):

A 8.4.14: **उपसर्गादसमासेऽपि णोपदेशस्य।** (*upasargād asamāse'pi ṇopadeśasya*)

For example, *nam* 'bend, bow' is taught with original *ṇ*- (*ṇamá*); the verb appears with *ṇ*- after *pra* in a compound such as *praṇata* 'one who has bowed' and in sequences such as *pra ṇamati* 'bows'. The stems *hinu*-, *mīnā*- also are subject to retroflexion after appropriate preverbs, as is the *loṭ* ending *āni* (A 3.4.89, 92 [398]):

A 8.4.15: **हिनुमीना।** (*hinumīnā*)

A 8.4.16: **आनि लोट्।** (*āni loṭ*)

For example: *pra hiṇoti* 'sends forth', *pra mīṇāti* 'harms, destroys', *pra vapāṇi* 'let me sow'.

The *n*- of the preverb *ni* (*neḥ*) also is replaced by *ṇ*- after a preverb with *-r-*, if it is followed by one of the following verbs: *gad* 'say, speak', *nad* 'sound', *pat* 'fly, fall', *pad* 'go, fall', verbs of the ghu class (A 1.1.20 [51]), *mā* 'measure', *so* 'finish, conclude, terminate', *han* 'strike, kill', *yā* 'go, travel', *vā* 'blow', *drā* 'run', *psā* 'eat', *vap* 'strew, sow', *vah* 'transport', *śam* 'become tired, calmed', *ci* 'heap up, gather', *dih* 'heap up':

A 8.4.17: **नेर्गदनदपतपदघुमास्यतिहन्तियातिवातिद्राति-प्सातिवपतिवहतिशाम्यतिचिनोतिदेग्धिषु च।** (*ner gadanadapatapadaghumāsyatihantiyātivāti-drātipsātivapativahatiśāmyaticinotidegdhiṣu ca*)

For example: *pra ṇi gadati, pra ṇi nadati.*

Further, *-n-* in a kṛt affix (*kṛti*: A 3.1.93 [66]) is subject to retroflexion if it follows a vowel (*acaḥ*) and the derivate of which it is a part occurs after an appropriate preverb, as in *pariyāṇa* 'going around' (< *pari-yāna*):

A 8.4.29: **कृत्यचः।** (*kṛty acaḥ*)

573 *n* is not (*na*) replaced by *ṇ* in particular instances where the conditions for this substitution hold. Retroflexion under the conditions given in A 8.4.29 does not apply if the kṛt affix

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occurs with *bhā* 'shine, appear', *bhū* 'be, become', *pū* 'become pure', *kam* 'desire', *gam* 'go', *pyāy* 'become full, grow', *vep* 'tremble'; nor does this apply in an item that follows pada-final (*padāntāt*) *-ṣ*:

A 8.4.34: **न भाभूपूकमिगमिप्यायीवेपाम्।** (*na bhābhūpūkamigamipyāyīvepām*)

A 8.4.35: **षात्पदान्तात्।** (*ṣāt padāntāt*)

For example: *prabhāna* 'shining', *prabhavana* 'arising', *niṣpāna* (< *nis-pāna*: A 8.3.41 [562]) 'drinking up'.

Replacement by *ṇ* is disallowed for *-n* that is pada-final (*padāntasya*) and when another pada intervenes (*padavyavāye pi*) between the item with the conditioning sound and the item with *n*:

A 8.4.37: **पदान्तस्य।** (*padāntasya*)

A 8.4.38: **पदव्यवायेऽपि।** (*padavyavāye'pi*)

For example, the *-n-* of *giri-na, guru-nā, māṣavāpena* are subject to retroflexion (A 8.4.2, 11 [570-571]), but the *-n* of *girīn* (acc. pl.), *gurūn,* and the *-n-* of *māṣakumbhavāpena* 'one who puts down māṣa beans and pots', where *-kumbha-* comes between *māṣa-* and the derivate with *-n-*, are not subject to replacement by *ṇ*. On the other hand, although the pada *ā* comes between *pary-* and *-nadhdha,* retroflexion does apply to account for *paryāṇaddha* (< *paryāṇadhdha*: A 8.4.53 [577]). Hence, A 8.4.2 specifically allows the replacement of *n* by *ṇ* if *āṁ* comes between the conditioning sound and an item with *n*.

574 Another group of assimilations is accounted for by

A 8.4.40: **स्तोश्चुना श्चुः।** (*stoś ścunā ścuḥ*)

A 8.4.41: **ष्टुना ष्टुः।** (*ṣṭunā ṣṭuḥ*)

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s and dental stops (*stoḥ*) in contact with *ś* or a palatal stop (*ścunā*) are replaced by *ś* and palatal stops (*ścuḥ*); the same sounds are replaced by *ṣ* and retroflex stops (*ṣṭuḥ*) when they come in contact with *ṣ* or a retroflex stop (*ṣṭunā*). For example: *kaR cid* > *kaḥ cid* (A 8.3.15 [557]) > *kas cid* (A 8.3.34

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[561]) > *kaś cid* (nom. sg. masc.) 'some one', *prātar ca* > ... *prātas ca* > *prātaś ca* 'also in the morning', *yatiR carati* > ... *yatis carati* > *yatiś carati* 'an ascetic wanders about', *agnicit śete* > *agnicid śete* (A 8.2.39 [546]) > *agnicij śete* > *agnicic śete* (A 8.4.55 [578]) > *agnicic chete* (A 8.4.63 [582]) 'the one who has set up a sacrificial fire is lying down', *agnicit jayati* > *agnicid jayati* > *agnicij jayati* '... is victorious', *rājn-as* > *rājñas* (gen. sg.) 'king', *sraṣ-tum* (A 8.2.36 [544]) > *sraṣṭum*, *iṭ-te* > *iṭṭe* 'invokes, praises', *liḍh-dha* (see 523) > *liḍh-ḍha* > ... *liḍḍha*.

Contrary to what the general rules A 8.4.40-41 allow, assimilation does not take effect in particular cases, as provided for in

A 8.4.42: **नपदान्ताट्टोरनाम्।** (*na padāntāṭ ṭor anām*)

A 8.4.43: **तोः षि।** (*toḥ ṣi*)

A 8.4.44: **शात्।** (*śāt*)

After a pada-final (*padāntāt*) retroflex stop (*ṭoḥ*), *s* and dental stops, with the exception of the *n* in *-nām* (*anām*), are not (*na*) replaced by *ṣ* and retroflex stops; e.g., *suganṭ sīdati* (A 8.3.28 [560]), *ṣaṣ sīdanti* > *ṣaḍ sīdanti* (A 8.2.39 [546]) >... *ṣaṭ sīdanti* (A 8.4.55 [578]) 'six are sitting down', *ṣaḍ sīdanti* > *ṣaḍ dhsīdanti* (A 8.3.29 [560]) > ... *ṣaṭ tsīdanti*, *ṣaṣ-nām* (A 7.1.55 [498]) > *ṣaḍ-ṇām* > *ṣaḍ-ṇām* > *ṣaṇṇām* (A 8.4.45 [575]) 'six (gen. pl.)'. A dental stop (*toḥ*) is not replaced by a retroflex before *ṣ* (*ṣi*) or by a palatal after *ś* (*śāt*); e.g., *bhavān ṣaṣṭhaḥ* 'you are the sixth', *pracch-na* > *praś-na* (A 6.4.19 [430]) 'question'.

575 A pada-final consonant of the set referred to by *yar* (*yaraḥ*: 129) is optionally (*vā*) replaced by the corresponding nasal (*anunāsikaḥ*) before a nasal (*anunāsike*):

A 8.4.45: **यरोऽनुनासिकेऽनुनासिकोवा।**

(*yaro'nunāsike'nunāsiko vā*)

For example: *vāg me* > *vāṅ me* 'my voice', *ṣaḍ-ṇām* (A 8.4.42 [574]) > *ṣaṇṇam*. *vāg* and *ṣaḍ-* are padas according to A 1.4.14,

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17 (49, 75), respectively.

576 Semivowels, stops, and voiceless spirants (*yaraḥ*) are subject to doubling in certain contexts and dialects. According to

A 8.4.46: **अचो रहाभ्यां द्वे (यरः वा)** (*aco rahābhyāṃ dve* [*yaraḥ vā* 45])

A 8.4.47: **अनचि च।** (*anaci ca*)

these sounds are optionally (*vā*) doubled (*dve* 'two') if they follow *r* or *h* (*rahābhyām*) preceded by a vowel (*acaḥ*) and if they follow a vowel and a vowel does not follow them (*anaci*). For example: *arka* > *arkka* 'ray', *brahma* > *brahmma* 'Brahman', *madhya* > *madhdhya* > *maddhya* (A 8.4.53 [577]) 'middle'.

Such doubling does not (*na*) apply, however, to a voiceless spirant (*śaraḥ*) when a vowel follows (*aci*), as in *adarśi* (3sg. aor. pass.) 'has been seen', *karṣati* 'draws':

A 8.4.49: **शरोऽचि (न)** (*śaro'ci* [*na* 48])

Nor, according to Śākaṭāyana (*śākaṭāyanasya*), does such doubling apply where there are three or more consonants (*triprabhṛtiṣu*):

A 8.4.50: **त्रिप्रभृतिषु शाकटायनस्य।** (*triprabhṛtiṣu śākaṭāyanasya*)

Further, according to Śākalya (*śākalyasya*), such doubling is disallowed in all instances (*sarvatra* 'everywhere'), and teachers in general (*ācāryāṇām*) say this is disallowed where a consonant subject to doubling follows a long vowel (*dīrghāt*):

A 8.4.51: **सर्वत्र शाकल्यस्य।** (*sarvatra śākalyasya*)

A 8.4.52: **दीर्घादाचार्याणाम्।** (*dīrghād ācāryāṇām*)

Thus, in Śākaṭāyana's dialect the *-n-* of *indra* 'Indra' is not doubled, but the *-k-* of *arka* is subject to doubling, as is the dental of *madhya*, but in Śākalya's dialect no such doubling is allowed, and there is general agreement in not allowing consonants to be doubled after long vowels, as in *dātra* 'sickle', *sūtra* 'thread', 'sūtra'.

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577 Before a voiced non-nasal stop (*jhaśi*), a consonant other than a nasal or a semivowel (*jhalām*) is replaced by a voiced unaspirated stop (*jaś*):

A 8.4.53: **झलां जश् झशि।** (*jhalāṁ jaś jhaśi*)

For example: *labh-dhum* (A 8.2.40 [547]) > *labdhum, dogh-dhum* > *dogdhum*. Similarly, deaspiration applies in an abhyāsa syllable (*abhyāse*: A 6.1.4 [52]), where not only unaspirated voiced stops but also unaspirated voiceless stops (*car ca*) substitute for consonants:

A 8.4.54: **अभ्यासे चर्च।** (*abhyāse car ca*)

That is, voiced and voiceless stops occur respectively in place of voiced and voiceless consonants (A 1.1.50 [92]); for example, *chakhāna* (3sg. pfct.) > *cakhāna* 'dug', *chiccheda* > *ciccheda* 'cut', *jhaghāna* > *jaghāna* 'struck, slew', *bhibheda* > *bibheda* 'split'.

578 A voiceless unaspirated stop (*car*) substitutes for a consonant other than a nasal or semivowel also before a voiceless consonant (*khari ca*), and this replacement is optional (*vā*) before a pause (*avasāne*: A 1.4.110 [42]):

A 8.4.55: **खरि च।** (*khari ca*)

A 8.4.56: **वावसाने।** (*vāvasāne*)

For example, in *bhettum* (< *bhed-tum-*) 'to split', *yuyutsa* (< *yuyudh-sa*) 'wish to fight', *-t-* obligatorily occurs, instead of *-d-* and *-dh-*, before *-t-*, *-s-*, but one can have either *vāg* or *vāk* 'speech, voice' followed by a pause.

579 In pre-pause position also, an *a-*, *i-*, or *u*-vowel (*aṇaḥ*) that is not pragṛhya (*apragṛhyasya*: 76) is optionally replaced by its nasalized (*anunāsikaḥ*) equivalent:

A 8.4.57: **अणोऽप्रगृह्यस्यानुनासिकः (वावसाने)**

(*aṇo'pragṛhyasyānunāsikaḥ* [*vāvasāne* 56])

For example: *dadhi* / *dadhiṁ* (nom.-acc. sg.) 'curds', *kumārī* / *kumāriṁ* (nom. sg.) 'girl', *madhu* / *madhuṁ* 'honey', but the final vowels of *agnī* (nom.-acc .du.) 'fires', *vāyū* 'winds' are not

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subject to nasalization.

580 The nasal offglide *ṁ* (*anusvāraḥ*) is replaced by a sound homogeneous with the following one (*parasavarṇaḥ*: A 1.1.9-10 [33-34]) when it occurs before a semivowel or stop (*yayi*), but this substitution applies only optionally (*vā*) to pada-final (*padāntasya*) *ṁ*:

A 8.4.58: **अनुस्वारस्य ययि परसवर्णः।** (*anusvārasya yayi parasavarṇaḥ*)

A 8.4.59: **वा पदान्तस्य।** (*vā padāntasya*)

For example: *śaṅk-* (base *śaki*: A 7.1.58 [439]) > *śaṁk-* (A 8.3.24 [559]) > *śaṅk-* (3sg. pres. *śaṅkate*) 'doubt, suspect', *uch-* (*úchi*) > *unch-* > *uṁch-* > *uñch-* (*uñchati*) 'glean', *nind-* (*ṇunidi*) > *niṁd-* > *nind-* (*nindati*) 'revile, scorn', *kaṭam karoti* > *kaṭaṁ karoti* > (optionally) *kaṭaṅ karoti* '... is making a mat', *phalam cinoti* > *phalaṁ cinoti* > (optionally) *phalañ cinoti* '... is picking a fruit', *odanam pacati* > *odanaṁ pacati* > (optionally) *odanam pacati* '... is cooking rice'.

In addition, before *l* (*li*), a dental stop is replaced by a sound homogeneous with the following one, that is, by an *l*:

A 8.4.60: **तोर्लि।** (*tor li*)

For example, *-l* replaces the *-d* of *tad* 'that' before the *l-* of *lunāti* 'cuts', and, as provided for by A 1.1.50 (92), nasalized *l* (*lṁ̃*) substitutes for the *-n* of *bhavān* (nom. sg. masc.) 'you' before *l-*: *tal lunāti, bhavāllṁ̃ lunāti.*

581 In certain contexts, a sound is replaced by one homogeneous with the sound that precedes it (*pūrvasya*). Thus, according to

A 8.4.61: **उदः स्थास्तम्भोः पूर्वस्य।** (*udaḥ sthāstambhoḥ pūrvasya*)

the initial consonant (A 1.1.54 [95]) of *stha, stambh* is replaced by a sound homogeneous with the preceding consonant when these follow *ud* (*udaḥ*): *ud sthā-* > *ut sthā-* (A 8.4.55 [578]) > *ut ththā-* (A 1.1.50 [92]) > *ut thā-* (A 8.4.65 [583]) 'rise, exert oneself', *ut stambh-* >... *ut tambh-* 'prop up', as in *utthātum,*

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uttambhitum.

582 *h* (*haṇ*) is optionally (*anyatarasyām*) replaced by a sound homogeneous with a preceding non-nasal stop (*jhayaḥ*):

A 8.4.62: **झयो होऽन्यतरस्याम्।** (*jhayo ho'nyatarasyām*)

For example, *dh* optionally substitutes for the *h*- of the particle *hi* 'because, for' following *tad* 'that': *tad dhi.*

Following a non-nasal stop, *ś* (*śaḥ*) is optionally replaced by *ch*, provided it occurs before a vowel or a semivowel other than *l* (*aṭi*), as in *tac chaknoti* (< *tac śaknoti*) 'can do that':

A 8.4.63: **शश्छोऽटि (झयः अन्यतरस्याम्)**

(*śaś cho'ṭi* [*jhayaḥ anyatarasyām* 62])

583 The following sūtras serve optionally to delete consonants in given contexts:

A 8.4.64: **हलो यमां यमि लोपः (अन्यतरस्याम्)** (*halo yamāṁ yami lopaḥ* [*anyatarasyām* 62])

A 8.4.65: **झरो झरि सवर्णे।** (*jharo jhari savarṇe*)

By the first of these rules, zero (*lopaḥ*) optionally replaces a semivowel or nasal (*yamām*) which occurs after a consonant (*halaḥ*) and is followed by a semivowel or nasal (*yami*); e.g., *śayyā* > *śayyyā* (A 8.4.47 [576]) > *śayyā* 'bed'. The next sūtra lets deletion apply to a non-nasal stop or a voiceless spirant (*jharaḥ*) which follows a consonant and occurs before a homogeneous (*savarṇe*) non-nasal stop or voiceless spirant (*jhari*); e.g., *pra-dt-ta* (A 7.4.47 [438]) > *pra-tt-ta* (A 8.4.55 [578]) > *pratta* 'presented'.

584 To derive *kanyātra* 'the girl is here' from *kanyā atra* by means of A 6.1.101 (532) presupposes that *ā* and *a* are homogeneous sounds. But they do not meet the conditions set forth in A 1.1.9 (33), since they differ with respect to articulatory effort: *ā* is an open vowel, but *a* is a close vowel. In accordance with its phonological behavior, however, Pāṇini treats *a* as thought it were indeed homogeneous with *ā*, differing from this only with respect to duration. The last sūtra of the grammar:

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A 8.4.68: अ अ॥ (*a a*)

then reinstates *a* in its true value of a close vowel. Since this rule is suspended with respect to every rule that precedes (A 8.2.1 [109]), moreover, it does nothing more than this, and has no effect on the phonological operations provided for in preceding sūtras.

Remark.

585 I have cited A 8.4.68 (584) as it is given in the Mahābhāṣya. The Kāśikā reads the sūtra with *iti* (अ अ इति). As far as can be seen from Pāṇinīyas' texts, A 8.3.4 (555) has been handed down with *anunāsikāt* instead of *ananunāsikāt*. This makes no sense as such, so that commentators have gone to considerable ends in order to interpret the rule. It is justifiable to consider that the version known from commentators is the result of haplological shortening (*ananunāsikāt* > *anunāsikāt*); for evidence and a discussion, see 'On the formulation of Aṣṭādhyāyī 8.3.4: *anunāsikāt paro' nusvāraḥ*', in *Surabhi* (E. R. Shreekrishna Sarma felicitation volume, edited by M. S. Narayana Murti), pp. 199–205.

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2.8. Accentual rules.

2.8.0. Introduction.

586 Accentual rules are not essentially separable from rules which provide replacements for vowels and items containing them. It is convenient and useful, nevertheless, to treat these sūtras separately. Two general groups of accentual rules are distinguished: those which provide for the accentual features of individual padas (A 1.4.14 [49]) and those which concern the features of contiguous padas in utterances as well as whole utterances.

587 Accentual properties are stated by rules for verbal bases (*dhātu*: A 1.3.1, 3.1.32 [47]), derived nominal bases (*prātipadika*: A 1.2.46 [48]), and affixes (*pratyaya*: A 3.1.1 [15]). The accents of primitive bases such as *gó* 'cow, bull, ox' and *áśva* 'horse' are not provided for by rules of the Aṣṭādhyāyī. They are taken as given. Presumably, items included in sets of the gaṇapāṭha (Section 1.4) were pronounced with their proper accentuation, just as verbs listed in the dhātupāṭha were characterized by their metalinguistic accentual features (Section 1.3.1). Vowels of augments (*āgama*) are low-pitched unless otherwise indicated, as in A 6.4.71 (238). See also A 3.1.3 (592).

588 At each stage of derivation, an accentual adjustment is made such that, in general, the accentuation proper to the unit introduced at this stage cancels a previously existing accentuation (see 590). An exception to this general procedure is made in accordance with the bracketing of stems and affixes (46, 212): The accentuation of an ending such as *tas* following a complex stem such as ((*su*-)*nu*-) is not superseded by the accentuation proper to the vikaraṇa *śnu* (A 3.1.73 [157]), although, in the sequence of derivation, *śnu* is introduced after an L-affix has been replaced by a sārvadhātuka affix such as *tas*; see 594. The result of this entire procedure is that, except as otherwise provided for explicitly, a pada contains no

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high pitched vowel (*anudāttam*) save one (*ekavarjam*). This is stated in

A 6.1.158: **अनुदात्तम्पदमेकवर्जम्।** (*anudāttam padam ekavajram*)

the general metarule that governs accentual operations.

Remarks.

589 1. There is a set of rules, attributed to Śāntanava, which attempt to account for the accentual properties of nominal bases --- called *phiṣ* in this treatise --- on the basis of their shapes and meanings. For example, the first rule (**फिषोऽन्त उदात्तः।** [*phiṣo'nta udāttaḥ*]) states that the last (*antaḥ*) vowel of a nominal base (*phiṣaḥ*) is high-pitched (*udāttaḥ*); e.g. *uccais* 'high up, loudly'. The third sūtra (**गेहार्थानामस्त्रियाम्।** [*gehārthānām astriyām*]) provides that bases meaning 'house' (*gehārthānām*), provided they are not used in the feminine (*astriyām*), also have high pitch on their last vowel; e.g., *gehá, śālā́*. Rule 2.3: **नब्विषयस्यानिसन्तस्य(आदिः)** (*nabviṣaya-syānisantasya*[*ādiḥ*]) states that the first (*ādiḥ*) vowel of a base which is always used in the neuter (*nabviṣayasya*) is high-pitched, unless the base ends with *-is* (*anisantasya*); e.g., *vána* 'forest', *sarpís* 'butter'. These rules, called *phiṭsūtrāṇi*, are generally included among the ancillary treatises associated with the Aṣṭādhyāyī, but they cannot reasonably be attributed to Pāṇini himself.

590 2. Pāṇinīyas recognize that an accentuation newly taught supersedes one which was previously in effect (e.g., vt. 9 on A 6.1.158 [588]): **सतिशिष्टस्वरबलीयस्त्वञ्च।** [*satiśiṣṭasvara-balīyastvañ ca*]). Details on what commentators have to say concerning this procedure --- referred to as the *satiśiṣṭasvara* (accent taught when there is a previous pitch on another vowel) principle --- are dealt with in part VI.6 of

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my work. For the present, it is sufficient to note that, although Pāṇini does not formulate this explicitly in the Aṣṭādhyāyī, there can be no doubt he operates with the procedure in question. Thus, he has to specify *upadeśe* in A 7.2.10 (146) in order that the augment *iṭ* be disallowed only after verbs which have low-pitched vowels when they are first introduced, not because of subsequent operations. For example, *lūñ* 'cut' is taught with a high-pitched base vowel as a marking to show that an ārdhadhātuka affix following it regularly takes the initial augment *iṭ* (A 7.2.35 [145]). In addition, by A 6.1.162 (592), *lū* has an udātta vowel in derivations. By the *sati-śiṣṭasvara* principle, however, the affix accentuation (A 3.1.3) proper to *syá* (A 3.1.33 [236]) cancels the base accent, so that, if A 7.2.10 provided merely that *iṭ* is not added to an affix following a stem with a low-pitched vowel, the augment would not be added to *syá* at the stage *lū-syá-ti*, with the result that one would allow * *loṣyáti* instead of *laviṣyáti*.

591 3. As a qualifier construed with *padam*, the term *anudāttam* in A 6.1.158 (588) can be interpreted in either of two ways: (1) *anudāttam* 'which contains low-pitched vowels (*anudātta*: A 1.2.30 [36]), (2) *an-udāttam* 'which does not have a high-pitched vowel (*udātta*: A 1.2.29). Both possibilities are considered in the Mahābhāṣya (III.97.4-5, 98.25-26), but commentators generally adopt (1). Nevertheless, this interpretation, under which a pada is allowed to have only low-pitched vowels except for one vowel, leads to problems, so that I have adopted (2). I shall discuss details in part VI.6.

2.8.1. Accents of bases, affixes, and individual padas.

592 The last (*antaḥ*) vowel of a verb (*dhātoḥ*) is high-pitched (*udāttaḥ*):

A 6.1.162: धातोः (अन्त उदात्तः) (*dhātoḥ* [*anta udāttaḥ* 159])

By A 1.1.21 (99), if a verbal base has only one vowel, this

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has high pitch in accordance with A 6.1.162. According to

A 3.1.3: **आद्युदात्तश्च्** (*ādyudāttaś ca*)

an item that gets the class name *pratyaya* (A 3.1.1 [15]) not only regularly follows the element to which it is introduced (A 3.1.2), it also has high pitch on its first vowel (*ādyudāttaḥ*) when it is introduced. This holds for affixes in general, but nominal endings regularly have low-pitched vowels, as do other affixes if they are marked with *p* (*suppitau*):

A 3.1.4: **अनुदात्तौ सुप्पितौ** (*anudāttau suppitau*)

For example, the verb ending *tip* has a low-pitched vowel to begin with, as do the nominal endings *am, jas*: *ásti* (< *ás-ti*: A 8.4.66 [622]) 'is', *sunóti* 'presses juice', *ruṇáddhi* 'hems in', *tanóti* 'stretches', *kriṇáti* 'buys', *vā́cam* (< *vā́c-am*) 'speech, voice (acc. sg.)', *vā́cas* (nom. pl.), *áśvās* 'horses'. Each of these padas has only one high-pitched vowel, as provided for in A 6.1.158 (588). By the *satiśiṣṭasvara* principle (590), the vowels of the affixes *śnu, śnam, u,* and *śnā* are high-pitched, but in *ásti* the base accent remains, as it does in *bhávati* 'is, becomes', *pácati* 'cooks', with two low-pitched suffixes, *śap* and *tip*. On the other hand, the ending *tas* of *stás* (3du.) 'are', *sunutás,* and so on has a high-pitched vowel, hence is not marked with *p*.

593 Consider again the form *laviṣyáti* 'will cut'. By A 7.2.135 (145), the affix *sya* takes the initial augment *iṭ* when it follows a stem (A 6.4.1 [105]) such as *lū́-* (cf. 590). Suppose now that the accent of the suffix also were allowed to take effect at this stage. One would then possibly allow **laviṣyati* instead of *laviṣyáti*. For the augment *iṭ* is introduced as the initial element of the affix (A 1.1.46 [17]), so that letting the affix have high pitch on its initial vowel allows for *-íṣya* with high-pitched *í*. Consequently, Pāṇini provides, by A 3.1.3 (592), for an affix to have high pitch on its first vowel at the moment it is introduced and gets the class name *pratyaya,* before it undergoes any operation such as augmenting. By the same token, the ending *jhí* is accented as shown at the moment it is

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introduced. The *jh* of *jhi* is subsequently replaced by *ant* (A 7.1.3 [509]). This does not mean, however, that one has an ending *-anti*. For, in accordance with A 1.1.56 (100), this ending should have the same accentual property as its substituend, namely high pitch on its first vowel: *ánti*, as in *sunvánti*, *kriṇánti*.

594 Following the procedure outlined in 588 correctly results in forms such as the third singular present *tudáti* 'shoves', with the vikaraṇa *śa* and the ending *tip*, but this would also allow incorrect forms such as **tudatás* (3du.) instead of *tudátas*. Similarly, the third singular middle ending *te* (< *ta*: A 3.4.79 [396]) is not marked with *p*, so that this procedure by itself would allow forms such as **kartārau* 'they two will do, make', **āsté* 'is seated', **śeté* 'is lying, sleeping'. Since Pāṇini does indeed operate with the procedure in question, a special rule of the Aṣṭādhyāyī provides for such forms. According to

A 6.1.186: तास्यनुदात्तेन्ङिददुपदेशाल्लसार्वधातुकमनुदात्तमह्न्विङोः। (*tāsyanudāttenṅidadupadeśāllasārvadhātukam anudāttam ahnviṅoḥ*)

a sārvadhātuka affix (A 3.4.113,117 [63]) that replaces an L-affix (*lasārvadhātukam*: A 3.4.77-78, 3.2.124, 126 [232, 262]) has a low-pitched vowel or vowels (*anudāttam*) if it follows *tās* (A 3.1.33 [236]), a verb with a low-pitched vowel marker (*anudāttet*), one marked with *ṅ* (*ṅit*) ---excluding *hnūṅ* 'hide' and *iṅ* (*adhi i*) 'study, learn' (*ahnviṅoḥ*) --- or a unit with *-a* at the stage when no grammatical or phonological operations have applied (*adupadeśāt*): *kartārau* (see 403), *āste* (base *āsa*), *śéte* (*śīṅ*), *tudátas*. The affix *śap* does not end with *-a* at the moment it is taught, but once its markers have been dropped unconditionally (A 1.3.9 [81]) and before any true grammatical or phonological operations take effect, this does consists of *a*, so that A 6.1.186 accounts also for examples such as *pácatas*.

Another special rule is required to derive forms of the type *dádati* 'they give'. Under the general procedure followed

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in the Aṣṭādhyāyī, one would otherwise derive **dadáti,* with an accented ending **-áti* (< *-jhí*: A 7.1.4 [509], cf. 593), as in *dattás* (3du.). To preclude this,

A 6.1.189: **अभ्यस्तानामादिः (अच्यनिटि)**

(*abhyastānām ādiḥ* [*acy aniṭi* 188])

provides that the first (*ādiḥ*) vowel of abhyasta elements (*abhyastānām*: A 6.1.5 [52]) is high-pitched if there follows a replacement of an L-affix that is a sārvadhātuka and begins with a vowel other than the augment *iṭ* (*acy aniṭi*). The first vowel of items like *dádati, jákṣati* 'they eat' (3du. *jakṣitás*) is thereby high-pitched. In order to have the same accentuation apply to derive forms like *dádāti,* and not **dadā́ti* (A 6.1.162 [592]), moreover,

A 6.1.190: **अनुदात्ते च।** (*anudātte ca*)

lets the accentuation provided for in the preceding sūtra apply also (*ca*) if abhyasta element is followed by an affix that does not have a high-pitched vowel (*anudātte*). The ending *tip* of *dádāti* not only derives from the L-affix *laṭ,* it also has a low-pitched vowel (A 3.1.4 [592]).

Now, *júhvati* 'they offer oblations' conforms to the accentual pattern which A 6.1.189 allows, but *juhóti* goes counter to what A 6.1.190 allows; similarly, *bibhéti* 'is afraid', *jihréti* 'is ashamed', *bibhárti* 'bears, supports, nourishes', *mamátti* 'gives joy', *jajánat* 'created', *dadhánat* 'supported' (see 612), *daridrāti* 'is poor, wretched', *jāgárti* 'is awake'. Accordingly,

A 6.1.192: **भीह्रीभृहुमदजनधनदरिद्राजागराम्प्रत्ययात् पूर्वम्पिति।** (*bhīhrībhṛhumadajanadhana-daridrājāgarām pratyayāt pūrvam piti*)

provides that, if the substitute for an L-affix is a sārvadhātuka suffix marked with *p* (*piti*) and this follows an abhyasta element derived from *bhī, hrī, bhṛ, hu, mad, jan, dhan,* or the abhyasta items *daridrā, jāgṛ,* then the vowel that precedes the affix (*pratyayāt pūrvam*) is high-pitched.

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There are also instances of variation, such that either the base vowel or a vowel of an ending is high pitched. Thus, according to

A 6.1.188: **स्वपादिहिंसामच्यनिटि (आदिः अन्यतरस्याम्)** (*svapādihiṁsām acy aniṭi* [*ādiḥ anyatarasyām* 187])

before a vowel (*aci*), except for the initial augment *iṭ* (*aniṭi*), of a sārvadhātuka element replacing an L-affix, the first vowel (*ādiḥ*) of verbs in the subgroup beginning with *svap* (*svapādi*: 161) and of *hiṁs* 'harm' is optionally (*anyatarasyām*) high-pitched; e.g., *svápanti / svapánti* 'they are sleeping', *hiṁsanti / hiṁsánti*. Verbs of the subgroup beginning with *jakṣ*, included in the group that begins with *svap*, are subject to A 6.1.189-190 instead of this sūtra.

595 A 3.1.3 (592) fails to account for the accentuation of certain derivates with kṛt suffixes. For example, *kṣáya* 'dwelling', *jáya* '(a horse or such) with which one gains victory' are accented as shown and contrast with *kṣayá* 'destroying', *jayá* 'victory', with a high-pitched affix (*ac*: A 3.3.56 [291]). Accordingly,

A 6.1.201: **क्षयो निवासे (आदिः)** (*kṣayo nivāse* [*ādiḥ* 197])

A 6.1.202: **जयः करणम्** (*jayaḥ karaṇam*)

provides that *kṣáya* in the sense of a place where people dwell (*nivāse*) and *jáya* denoting a means (*karaṇam*) have high pitch on their first vowels. Similarly, to account for derivates such as *vṛ́ṣa* 'male' (affix *ka*: A 3.1.135 [290])

A 6.1.203: **वृषादीनाञ्च** (*vṛṣādīnāñ ca*)

provides that the first vowel of *vṛ́ṣa* and similar derivates (*vṛṣādīnām*) also is high-pitched.

596 By A 3.1.4 (592), nominal endings in general have low-pitched vowels. There are also exceptions to this. Thus, as provided for in

A 6.1.168: **सावेकाचस्तृतीयादिर्विभक्तिः (उदात्तः)** (*sāv*

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ekācas tṛtīyādir vibhaktiḥ [*udāttaḥ* 159])
an ending (*vibhaktiḥ*: A 1.4.104 [65, 67]) of a triplet from the third on (*tṛtīyādiḥ*) has a high-pitched vowel if it follows a nominal that is monosyllabic (*ekācaḥ*) before the ending *sup* (*sau*); e.g., *vācā́* (instr. sg.) 'voice, speech', *vāgbhyā́m* (instr.-dat.-abl. du.), *vāgbhís* (instr. pl.), *vākṣú* (loc. pl.), but *rā́jñā, rā́jabhyām* (< *rā́jan-bhyām*), *rā́jabhis, rā́jasu* from *rā́jan* 'king'. Endings of the triplets in question optionally (*anyatarasyām*) have high-pitched vowels if they follow a monosyllabic second component of a compound (*uttarapadāt*), provided this has a vowel that is high-pitched by virtue of being the last vowel in a compound (*antodāttāt*: A 6.1.223 [602]) and that this component is part of a compound other than an obligatory one (*anityasamāse*) derived by rules starting with A 2.2.17 (315):

A 6.1.169: **अन्तोदात्तादुत्तरपदादन्यतरस्यामनित्यसमासे।**
(*antodāttād uttarapadād anyatarasyām anityasamāse*)

For example, *puruṣavācā́* 'voice of a man' alternates with *puruṣavā́cā*, with high pitch on the ending or on the vowel of *-vāc*, but from *agnicít* (A 3.2.91, 2.2.19 [295, 315]) one has only *agnicítā*.

597 According to

A 6.1.173: **शतुरनुमो नद्यजादी (अन्तोदात्तात् असर्वनामस्थानम्)** (*śatur anumo nadyajādī* [*antodāttāt* 169, *asarvanāmasthānam* 170])
after an item that ends in *śatṛ* (*śatuḥ*: A 3.2.124, 126 [262]) with high pitch on its last vowel (*antodāttāt*), a nadī element (see 56) as well as vowel-initial endings (*nadyajādī*) other than those of the sarvanāmasthāna set (*asarvanāmasthānam*: A 1.1.42-43 [69]) have high pitch, provided the item with *śatṛ* does not have the augment *num* (*anumaḥ*). By A 3.1.3 (592), *śatṛ* has a high-pitched *-a-* when it is first introduced. A stem such as *tudát-* (< *tuda-át*: A 6.1.97, 8.2.5 [531, 610])

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optionally gets the augment *num* if a nadī element follows (A 7.1.80 [489]). If the augment does not occur, the nadī element is high-pitched, as in *tudatí*, but if *num* is added, the suffix retains its accentuation: *tudántī*. In a form such as *lunatā́* (< *lu-nā-at-ā* : A 6.4.112 [456]), where the augment is not allowed even optionally, the vocalic ending *ā* has high pitch. On the other hand, the ending *ī* of *dádatī* is not so accented, since *dádat-* has high pitch on its first vowel (A 6.1.189 [594]).

In addition, by

A 6.1.179: षट्त्रिचतुर्भ्यो हलादिः। (*ṣaṭtricaturbhyo halādiḥ*)

A 6.1.180: झल्युपोत्तमम्। (*jhaly upottamam*)

a consonant-initial (*halādiḥ*) ending has a high-pitched vowel after nominals of the ṣaṣ class (A 1.1.24-25 [60]), *tri* 'three', and *catur* 'four', but the penultimate vowel of a polysyllabic pada (*upottamam*) is high-pitched if it consists of these nominals followed by an ending that begins with a consonant other than a semivowel or nasal (*jhali*); e.g., *ṣaḍbhís* (instr. pl.) 'six', *pañcānā́m* (gen. pl.) 'five', *pañcábhis*.

598 The affix *matup* (A 5.2.94 [346]) has a high-pitched vowel if it follows an item that originally ends in a high-pitched short vowel or occurs after the augment *nuṭ* (*hrasvanuḍ-bhyām*):

A 6.1.176: ह्रस्वनुड्भ्याम्मतुप् (अन्तोदात्तात्)
(*hrasvanuḍbhyām matup* [*antodāttāt* 169])

For example, the affix of *agnimát* is added to a pada containing *agní* 'fire', a base that ends with a short high-pitched vowel, but the affix of *vásumat, gómat* is added to padas with *vásu* 'treasure' and *gó* 'cow', neither of which ends in such a vowel. *matup* is marked with *p*, so that, by the general rule A 3.1.4 (592), the suffix of *vásumat* and *gómat* has a low pitched vowel.

599 Some affixes are polysyllabic and have a final high-pitched vowel, others have a vowel with a combination of

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high and low pitches (*svarita*: A 1.2.31 [36]). Such affixes are given special markers to indicate their accentuation:

A 6.1.163: चितः (अन्त उदात्तः) (*citaḥ* [*anta udāttaḥ* 159])

A 6.1.164: तद्धितस्य। (*taddhitasya*)

A 6.1.165: कितः। (*kitaḥ*)

A 6.1.185: तित्स्वरितम्। (*tit svaritam*)

By A 6.1.163, the last vowel of an affix marked with *c* (*citaḥ*) is high-pitched; e.g., *śānacp, irec* (A 3.2.124, 3.4.81 [262, 396]), as in *kurvāṇá* 'making', *cakriré*. The next two rules concern taddhita affixes. The final vowel of a taddhita marked with *c* or *k* (*kitaḥ*) is high-pitched. For example, *dakṣiṇatás, ākṣiká* contain the suffixes *atasuc* and *ṭhak* (A 5.3.28, 4.4.1-2 [349, 338-339]). Since *ṭhak* is thus deemed to have a final high-pitched vowel, once *ṭh* is replaced by *ik* (A 7.3.50 [509]), one has *iká* (cf. 593). According to A 6.1.185, an affix marked with *t* (*tit*) has a svarita vowel (see 611); e.g., *kartavyà, ceyà, kāryà* have the suffixes *tavyat, yat, ṇyat* (A 3.1.96, 97, 124 [121-122, 292]).

Such markings account for the general accentual features of the affixes in question, and there are exceptions to what the sūtras cited provide. For example, *śáyāna* 'lying' (base *śīṅ*), *pácamāna* 'cooking', *dádhāna* 'putting' contain *śānac*, but their accentuation is covered by A 6.1.186,189 (594). Similarly, contrary to what A 6.1.185 allows for in general, by

A 6.1.214: ईडवन्दवृशंसदुहां ण्यतः (आदिः)

(*īḍavandavṛśaṁsaduhāṁ ṇyataḥ* [*ādiḥ* 197])

provides that the first vowel of a derivate ending with *ṇyat* (*ṇyataḥ*) is high-pitched if the suffix is attached to *īḍ* 'praise, invoke', *vand* 'honor, praise', *vṛ* 'choose', *śans* 'declare, praise', *duh* 'milk'; e.g., *íḍya* 'to be praised, invoked'.

600 As can be seen from the last sūtra considered, some rules provide which vowel is high-pitched in derivates containing

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certain affixes, which can have particular markings. Thus, in a derivate with an affix marked by *l* (*liti*), the vowel preceding the affix (*pratyayāt pūrvam*) is high-pitched:

A 6.1.193: **लिति (प्रत्ययात्पूर्वम्)** (*liti* [*pratyayāt pūrvam* 192])

The first vowel (*ādiḥ*) of a derivate that has an affix marked with *ñ* or *n* (*ñniti*) is high-pitched:

A 6.1.197: **ञ्नित्यादिर्नित्यम्।** (*ñnity ādir nityam*)

And in a polysyllabic term which contains an affix marked with *r* (*riti*), the penultimate vowel (*upottamam*) has high pitch:

A 6.1.217: **उपोत्तमं रिति।** (*upottamaṁ riti*)

For example: *kā́raka* (affix *ṇvul*: A 3.1.133 [248]), *papā́ca* (*ṇal*: A 3.4.82 [397]), *gā́rgya* (*yañ*: A 4.1.105 [335]), *kṛ́ti* (*ktin*: A 3.3.94 [114]), *kártṛ* (*tṛn*: A 3.2.135 [290]), *karaṇíya* (*anīyar*: A 3.1.96 [121]), *paṭudeśíya* (A 5.3.67 [356]).

According to

A 6.1.187: **आदिः सिचोऽन्यतरस्याम्।** (*ādiḥ sico'nyatarasyām*)

the first (*ādiḥ*) vowel of an item ending with the affix *sic* (*sicaḥ* : A 3.1.44 [236]) is optionally (*anyatarasyām*) high-pitched; e.g., *kā́rṣṭām* / *kārṣṭā́m* (3du. aor.), *lā́viṣṭām* / *lāviṣṭā́m*. In the first pair, the high pitch goes with the vowel of the verb (*kār-* < *kṛ-* 'do, make') or with the vowel of the ending *tām*. In the second pair, however, this pitch characterizes either the base vowel (*lāv-* < *lū-* 'cut') or the initial augment *iṭ*. Now, A 3.1.3 (A 592) lets the first vowel of an affix be high-pitched at the moment the item to which the class name *pratyaya* applies is introduced and gets this label. Moreover, an augment, such as the initial *i* of *-isyá-* in *laviṣyáti*, regularly does not take high pitch (593). In order, then, to allow for the accentuation of a form like *lāvíṣṭām*, with high pitch on the augment of *-is-*, Pāṇini marks the affix *sic* with *c*. This marking is clearly not meant to provide, by A 6.1.163 (599), for a high-pitched vowel of simple *s*, since this

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has no vowel. The marking is intended to let the vowel of the augmented affix *-is-* be high-pitched, contrary to what is usual.

601 There are instances where, contrary to A 6.1.158 (588), a single pada may have more than one high-pitched vowel. Such is the case with Vedic infinitives of the type *hartávaí* 'to take'. By

A 6.1.200: **अन्तश्च तवै युगपत्।** (*antaś ca tavai yugapat*)

not only the first vowel of the affix *tavai* but also, and simultaneously (*yugapat*), the last (*antaś ca*) vowel of a derivate with *tavai* is high-pitched.

602 Special rules are formulated to account for the accentuation of compounds (Section 2.4.2.3). The most general of these sūtras,

A 6.1.223: **समासस्य (अन्तः)** (*samāsasya* [*antaḥ* 220])

provides that the last (*antaḥ*) vowel of a compound (*samāsasya*) is high-pitched; e.g., *rājapuruṣá* (< *rā́jan-as púruṣa-s*: A 2.2.8 [301]) 'king's man', *indraśatrú* (< *índra-as śátru-s*) 'enemy, destroyer of Indra'. Other rules provide for special accentual properties of particular compounds.

603 In some compounds, a prior component (*pūrvapadam*) retains its original accent (*prakṛtyā*). This is the general pattern in a bahuvrīhi compound (*bahuvrīhau*: 317):

A 6.2.1: **बहुव्रीहौ प्रकृत्या पूर्वपदम्।** (*bahuvrīhau prakṛtyā pūrvapadam*)

For example, in the bahuvrīhi *índraśatru* 'one whose enemy, destroyer is Indra', the first component retains its original accentuation, but in the tatpuruṣa *indraśatrú* the final vowel is high-pitched (A 6.1.223 [602]).

Certain tatpuruṣa compounds also retain the original accentuation of prior components. The following is a selection of sūtras that provide for this pattern:

A 6.2.43: **चतुर्थी तदर्थे।** (*caturthī tadarthe*)

A 6.2.45: **क्ते च।** (*kte ca*)

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A 6.2.46: **कर्मधारयेऽनिष्ठा।** (*karmadhāraye'niṣṭhā*)

A 6.2.48: **तृतीया कर्मणि।** (*ṭṛtīyā karmaṇi*)

A 6.2.49: **गतिरनन्तरः।** (*gatir anantaraḥ*)

A pada with a fourth-triplet ending (*caturthī*) retains its original accent before a pada that denotes something intended for what the first component signifies (*tadarthe*) and before a pada that ends with *kta* (*kte*); e.g., *yūpadāru* (< *yūpa-e dāru-s*· A 2.1.36 [308]), *góhita* (< *gó-bhyas hitá-s*). In a karmadhāraya compound (*karmadhāraye* : A 1.2.42 [314]) with a second component in *-kta*, a prior pada other than one ending in a niṣṭhā suffix (*aniṣṭhā* : A 1.1.26 [66]) retains its original accentuation, as in *śréṇikṛta* (< *śréṇi-as kṛtá-as* : A 2.1.59 [313]). A component pada with a third-triplet ending (*ṭṛtīyā*) keeps its original accent before a component with *-kta* signifying an object (*karmaṇi*), and a gati (*gatiḥ*: A 1.4.60-74 [55]) that immediately precedes (*anantaraḥ*) such a component also retains its accentuation; e.g., *áhihata, ahíhata* 'killed by a snake' (< *áhi-ā hatá-s, ahí-ā hatá-s* : A 2.1.32 [308]), *prákṛta* 'set forth' (< *prá-s kṛtá-s*: A 2.2.18 [315]).

604 A group of rules headed by

A 6.2.64: **आदिरुदात्तः।** (*ādir udāttaḥ*)

provide that the first (*ādiḥ*) vowel of a prior component in a compound is high-pitched. Thus, according to

A 6.2.75: **अणि नियुक्ते।** (*aṇi niyukte*)

this accentuation holds for a first component followed by a derivate with *aṇ* (*aṇi*) in a compound that refers to someone who has been set at a job by a person in authority (*niyukte*); e.g., *chátradhāra* 'umbrella bearer', with *-dhāra* (A 3.2.1, 2.2.19 [295, 315]). By

A 6.2.76: **शिल्पिनि चाकृञः।** (*śilpini cākṛñaḥ*)

the same accentual pattern obtains in a compound denoting an artisan (*śilpini*), if the second component contains *aṇ* after a verb other than *kṛ* (*akṛñaḥ*); e.g., *tántuvāya* (A 3.2.2 [295]), but

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kumbhakārá (A 3.2.1), with the accent proper to *-kārá* (A 6.2.139 [606]).

The conditions for accentual patterning may involve the meaning of a particular component also. For example,

A 6.2.84: ग्रामेऽनिवसन्तः। (*grāme'nivasantaḥ*)

provides that the first vowel of the prior member of a compound is high-pitched if the component occurs before *grāma* (*grāme*), on condition also that the first component does not refer to people actually dwelling in a village in question (*anivasantaḥ*), that is, provided that *-grāma* does not refer to a place where the people in question live; e.g., *váṇiggrāma* 'group of merchants, *dākṣigrāmá* 'village where descendants of Dakṣa live'.

605 Other rules, headed by

A 6.2.92: अन्तः। (*antaḥ*)

account for compounds in which the last (*antaḥ*) vowel of the prior component is high-pitched. For example, by

A 6.2.97: द्विगौ क्रतौ। (*dvigau kratau*)

this accentuation applies to a constituent followed by a dvigu compound (*dvigau*: A 2.1.52 [314]) used with reference to a rite (*kratau*); e.g., *gargátrirātra* 'three-night sacrificial rite of the Gargas'. According to

A 6.2.102: कुसूलकूपकुम्भशालम्बिले।
(*kusūlakūpakumbhaśālam bile*)

the last vowel of *kusūla* 'grain storage pot, granary', *kūpa* 'well', *kumbha* 'pot', *śālā* 'room, house' is high-pitched before the second component *bila* 'opening', as in *kusūlábila* 'opening of a grain storage pot', *kūpábila* 'well opening'.

The derivate *viśvadeva*, used of any one who has the group of gods called 'all gods' (*viśve devā́ḥ, viśvádevāḥ*) on his side, conforms to the general accentual pattern for bahuvrīhi compounds (A 6.2.1 [603]); similarly, one has *vísvayaśas* 'all-fame'. But derivates such as *viśvádeva* 'Viśvadeva', *viśváyaśas* 'Viśvayaśas' do not conform to this pattern.

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Accordingly,

A 6.2.106: **बहुव्रीहौ विश्वं संज्ञायाम्** (*bahuvrīhau viśvaṁ saṁjñāyām*)

provides that *viśva* (*viśvam*) has high pitch on its last vowel when it is a first component in a bahuvrīhi used as a name (*saṁjñāyām*). By

A 6.2.107: **उदराश्वेषुषु** (*udarāśveṣuṣu*)

the last vowel of any prior member is high-pitched before *-udara* 'belly', *-aśva* 'horse', *-iṣu* 'arrow' in a bahuvrīhi compound used as a name: *vṛkódara* (< *vṛká-udara*: A 8.2.5 [610]) 'wolf-belly', *haryáśva* (< *hárí-aśva*: A 8.2.4) 'tawny-horse'. *mahéṣu* (< *mahā́-iṣu*) 'great-arrow'.

606 The accent of the second component (*uttarapada*) is retained in certain tatpuruṣa compounds. By

A 6.2.139: **गतिकारकोपपदात्कृत् (प्रकृत्या तत्पुरुषे)** (*gatikārakopapadāt kṛt* [*prakṛtyā* 137, *tatpuruṣe* 123])

a second member (*uttarapadam* [contextually modified from *uttarapada*-(A 6.2.111)]) in a tatpuruṣa (*tatpuruṣe*) retains its original accent if it is a derivate ending in a kṛt affix (*kṛt*: A 3.1.93 [66]) and follows a gati, a term denoting a kāraka, or an upapada (*gatikārakopapadāt*). For example, in *prahā́raka* 'one who strikes', the derivate *hā́raka*, with the kṛt affix *ṇvul* (A 3.1.133 [248]), retains it original accent, on the vowel that precedes the suffix (A 6.1.193 [600]). Similarly, *pravráścana* 'instrument for cutting', with the affix *lyuṭ* (A 3.3.117 [293]), retains the accent proper to *vráścana* in the compound *idhmapravráścana* 'instrument for cutting fire wood'. In *sukára* (A 3.3.126 [295]), the original accent of the derivate *kára*, with the affix *khaL*, is retained.

607 The compound *avabhṛthá* 'final bath taken at the end of a rite' contains the derivate *bhṛ́tha* (affix *kthan*: see 613), and *āvasathá* 'house' contains the derivate *vasátha* (affix *atha*: 613). By A 6.2.139 (606), the derivates with these kṛt affixes

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would be allowed to retain their original accentuation. The same rule would allow, contrary to what is required, derivates such as *bhéda* (affix ***ghañ***: A 3.3.18-19, 6.1.197 [111, 600]), *kṣáya* 'dwelling' (A 6.1.201 [595]), *láva* 'cutting' (affix ***ap***: A 3.3.57, 3.1.4 [291, 592]), *khanítra*- 'spade' (affix *itra*: A 3.2.184, 3.1.3 [293, 592]), *vṛ́ṣa* (A 6.1.203 [595]) to keep their accentuation in compounds like *kāṣṭhabhedá* 'splitting of wood', *prakṣayá* 'outstanding dwelling', *pralavá* 'great cutting', *prakhanitrá* 'outstanding spade', *pravṛ́ṣá* 'exceedingly male'. In addition, provision must be made for the accentuation of a compound like *puruṣṭutá* 'praised in many places'. Therefore,

A 6.2.144: **थाथघञ्क्ताजबित्रकाणाम् (अन्तः)** (*thāthaghañktājabitrakāṇām* [*antaḥ* 143])

provides that the last vowel (*antaḥ*) of derivates with *tha*, *atha*, ***ghañ***, ***kta***, ***aj***, ***ap***, *itra*, and ***ka*** is high-pitched if the derivates follow a gati, a term denoting a kāraka, or an upapada.

608 The purpose of accentual rules such as those considered in 602-607 is to account for the single vowels that bear high pitch in derived nominal bases which are compounds. There are some compounds, however, in which the separately accented vowels of the padas that enter into composition are retained. Special accentual rules are of course required for such compounds. Thus,

A 6.2.140: **उभे वनस्पत्यादिषु युगपत् (प्रकृत्या)** (*ubhe vanaspatyādiṣu yugapat* [*prakṛtyā* 137])

accounts for compounds in a set that begins with *vánaspáti* 'tree' and includes derivates such as *bṛ́haspáti* 'Bṛhaspati'. Both (*ubhe*) padas in these items (*vanaspatyādiṣu*) simultaneously (*yugapat*) retain their original accentuations. The same is true in general also for a dvandva compound (A 2.2.29 [318]) composed of divinity names (*devatādvandve*) such as *índrāváruṇau* (< ... *índraváruṇau*: A 6.3.26 [461]):

A 6.2.141: **देवताद्वन्द्वे च।** (*devatādvandve ca*)

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This does not apply (*na*), however, in a dvandva where the first vowel of the second component is low-pitched (*uttarapade'nudāttādau*), unless this component is *prthivī* 'Earth', *rudrá* 'Rudra', *pūṣán* 'Pūṣan', *manthín* 'Manthin':

A 6.2.142: **नोत्तरपदेऽनुदात्तादावपृथिवीरुद्रपूषमन्थिषु।**

(*nottarapade'nudāttādāv apṛthivīrudrapūṣamanthiṣu*)

Thus, one has *dyāvāpṛthivyaù* (< *dyāvāpṛthivī-au*: A 8.2.4 [610]) 'Heaven and Earth', *sómārudraú* (< *sómārudrá-au* : A 8.2.5) 'Soma and Rudra', *índrāpūṣáṇau* 'Indra and Pūṣan', *śukrāmanthínau* 'Śukra and Manthin', but *indrāgnī* (< *indrāgní-au*).

609 A vocative form (*āmantritasya* : A 2.3.48 [68]) has high pitch on its first vowel, as in *ágne* 'Agni' (base *agní*):

A 6.1.198: **आमन्त्रितस्य च (आदिः उदात्तः)**

(*āmantritasya ca* [*ādiḥ* 197, *udāttaḥ* 159])

610 Certain accentual rules are connected with rules that provide for replacing vowels. Consider the derivate *kumārī́*, gotten from *kumārá-ī* (A 6.4.148 [504]), with the feminine suffix *ṅīp* (A 4.1.20, 3.1.4 [271, 592]). According to

A 6.1.161: **अनुदत्तस्य च यत्रोदात्तलोपः (उदात्तः)**

(*anudāttasya ca yatrodāttalopaḥ* [*udāttaḥ* 159])

a high-pitched vowel (*udāttaḥ*) occurs instead of a low-pitched vowel (*anudāttasya*) before which (*yatra*) a high-pitched vowel is deleted (*udāttalopaḥ*) : *kumārá-ī* > *kumārī́*. Similarly, endings such as *śas* and *ṭā*, although they generally have low-pitched vowels (A 3.1.4 [592]), are high-pitched after *path-* (< *pathín*: A 7.1.88 [472]): *pathás*, *pathā́*.

Now, a vowel *ī* is subject to replacement by *y* before a disimilar vowel (A 6.1.77 [125]). If the vowel that gets replaced by a semivowel is high-pitched or svarita (*udāttasvaritayoḥ*), a low-pitched vowel (*anudāttasya*) which follows such a semivowel (*yaṇaḥ*) is replaced by a svarita vowel (*svaritaḥ*):

A 8.2.4: **उदात्तस्वरितयोर्यणः स्वरितोऽनुदात्तस्य।**

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(*udāttasvaritayor yaṇaḥ svarito'nudāttasya*)

For example: *kumārī-as* > *kumāryàs* (nom. pl.), *harī-aśva* (A 6.2.107 [605]) > *haryàśva*. Further, the vowels that are high-pitched by A 6.1.173 (597) also are high-pitched if they follow a semivowel which has replaced a high-pitched vowel (*udāttayaṇaḥ*), provided this is preceded by a consonant (*halpūrvāt*):

A 6.1.174: **उदात्तयणो हल्पूर्वात्।** (*udāttayaṇo halpūrvāt*)

For example, the vowel of *ṭṛc* (A 3.1.133 [248]) is high- pitched (see 611); its *-ṛ* is subject to semivowel replacement before the ending *ṭā* and the feminine affix *ṅīp* (A 4.1.5 [271]), which also is replaced by a semivowel before *ṭā*: *kartṛ-ā* > *kartrā́*, *kar-tṛ-ī-ā* > *kartr-ī́-ā* > *kartryā́*. This accentuation does not apply (*na*), however, if the semivowel in question replaces the feminine suffix *ūṅ* (A 4.1.66, 3.1.3 [271, 592]) or *-ū́* of a verb (*ūṅidhātvoḥ*):

A 6.1.175: **नोङ्धात्वोः।** (*noṅidhātvoḥ*)

For example: *brahmabandhū́-ā* > *brahmabandhvà* 'pseudo-Brāhmaṇa woman', *khalapū́-ā* > *khalapvà* 'one who cleans a threshing floor'.

The feminine stem *brahmabandhū́* derives from *brahma-bandhu-ū́*, with *-ū́* replacing the two continguous vowels (A 6.1.101 [532]). According to

A 8.2.5: **एकादेश उदात्तेनोदात्तः।** (*ekādeśa udāttenodāttaḥ*)

if there is a single replacement (*ekādeśe*) of two vowels and one of the vowels is high-pitched (*udāttena*), the replacement too is a high-pitched vowel (*udāttaḥ*). This accounts also for instances such as *agnī* (< *agní-au*: A 6.1.102), *devaís* (< *devá-ais*: A 6.1.88 [529]), *vṛkódara* (< *vṛká-udara*: A 6.2.107, 6.1.87 [605, 528]).

Remarks.

611 1. The affixes *ṭṛc, ac* (A 3.1.133,134, 3.3.56 [248, 290, 291]

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are monosyllabic, so that they do not require being marked with *c* in accordance with A 6.1.163 [599]), although, once they have been marked thus, this rule does indeed apply to them. The marker for *ṭṛc* serves to allow the use of *ṭṛ* as a common symbol referring to this and to *ṭṛn* (A 3.2.135 [290]): if there were simply an affix *ṭṛ*, without any marker, a term *ṭṛ* (gen. sg. *tuḥ*), as in A 6.4.154: **तुरिष्ठेमेयस्सु।** (*tu riṣṭhemeyassu*) --- which provides for dropping *-ṭṛ* of a stem before *iṣṭhan*, *imanic*, and *īyasun* --- would refer to this and not also to *ṭṛn*. Consequently, A 6.4.154 would not provide for deleting the *-ṭṛ* of a term like *hántṛ*, so that it would not account for a Vedic derivate like *hániṣṭha* 'who strikes, kills exceedingly, who most strikes, kills'. *ac* is given the marker *c* in order to distinguish it from *a* (A 3.3.102 [291]): *-ac-* in A 6.2.144 (607) refers only to *ac*. See also 82. It is taken for granted, though not specifically noted in most commentaries, that the last vowel of an affix marked with *t* is a svarita vowel (A 6.1.185 [599]). Additional details are considered in part VI.6 of my work.

612 2. Commentators generally agree that *jajánat*, *dadhánat*, the accent of which is accounted for by A 6.1.192 (594), are Vedic forms, and they generally derive these forms starting with *leṭ* (A 3.4.7 [233]). In the Nyāsa on Kāśikā 7.4.77, Jinendrabuddhi remarks that all verbs of the subgroup which follows the group beginning with *ṇijir* (see 172 B-C) are restricted to Vedic usage, and Kṣīrasvāmin explicitly notes that the twelve verbs starting with *ghṛ* are Vedic. [Nyāsa VI.193: **ये च निजादिभ्यः परे ते सर्व एव छान्दसाः।**, KṢT p. 196: **जिघर्त्यादयो द्वादश छान्दसाः।**, similarly, MDhV pp. 397, 399 (on III.24, 37)] However, the Dhātupradīpa records some difference of opinion. Maitreya first notes that *chandasi* at the end of the third major group in the dhātupāṭha is meant to indicate that *jan* and *gā* are Vedic, then goes on to remark that according to some this term is linked to all the verbs

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from *ghṛ* onwards. [DhPr p. 88: छन्दसीति। इमौ जनगाधातू छान्दसावित्यर्थः। घृप्रभृतयोऽपि छन्दसीत्यनेन सम्बद्धयन्त इति केचित्।] The issue is not of major importance in the present context. Note only that western interpreters generally take *dadhánat* in RV 10.73.1d: माता यद्वीरं दधनद्धनिष्ठा। (*mātā́ yád vīrán dadhánad dhániṣṭhā*) as a form meaning 'let run' or such, but Indian commentators take this to be a form of *dhan* meaning 'produce fruit' (*dhānye*), and Sāyaṇa glosses *dadhánat* with *adhārayat* 'supported, maintained' in his commentary on the passage.

613 3. The affixes *tha* and *atha* referred to in A 6.2.144 (607) are uṇādi suffixes (cf. 296). The derivates given as illustrations are accounted for by introducing *kthan* after *bhṛ* construed with the preverb *ava* and *atha* after *vas* used with a preverb. [US 2.3: अवे भृञः (क्थन्), 3.114: उपसर्गेवसेः (अथः) (*ave bhṛñaḥ* (*kthan* 2), *upasarge vaseḥ* (*athaḥ* 113)]

2.8.2. Accents of connected padas.

614 A single vocative form has high pitch on its first vowel according to A 6.1.198 (609). There are, however, larger sequences that are treated accentually as though they were a single vocative. For example, the padas of the sequence *śúbhas patī* 'you two lords of brilliance' are not treated as indepen- dent padas, each with its own accent: *śubhás* according to A 6.1.168 (596) and *pátī*. Accordingly,

A 2.1.2: सुबामन्त्रितेपराङ्गवत्स्वरे। (*sub āmantrite parāṅgavat svare*)

provides that if a pada with a nominal ending (*sup*) is followed by a vocative form (*āmantrite*) with which it is syntactically and semantically connected, the first pada is treated, with respect to accent (*svare*), as though it were part of the following item (*parāṅgavat*). That is, such a sequence is

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treated as a single pada for accentual purposes, so that, by A 6.1.198, the first vowel of the first pada is high-pitched and, by A 6.1.158 (588), this is the only udātta element of the complex.

615 There are contexts in which an entire pada (*sarvam* [*padam*] 'whole [pada]') has no high-pitched vowel (*anudāttam*). Rules which provide for this come under the heading

A 8.1.18: **अनुदात्तं सर्वमपादादौ।** (*anudāttaṁ sarvam apādādau*)

which is part of the section headed by A 8.1.16-17 (105, 111). Each of these rules concerns a pada (*padasya*) that occurs after another pada (*padāt*), and A 8.1.18 provides that an entire pada, to be specified in subsequent sūtras, lacks a high-pitched vowel if it follows another pada, under conditions also to be specified, unless it occurs at the beginning of a verse section (*apādādau*). Thus, contrary to what A 6.1.198 (609) provides, a vocative form (*āmantritasya*) regularly has no high-pitched vowel if it follows another pada:

A 8.1.19: **आमन्त्रितस्य च।** (*āmantritasya ca*)

In addition, a pada with a verb ending (*tiṅ*) generally has no high-pitched vowel if it follows a pada that does not terminate in a verb ending (*atiṅaḥ*):

A 8.1.28: **तिङ्ङतिङः।** (*tiṅṅatiṅaḥ*)

For example, in

(116) **किङ्करोषि देवदत्त।** (*kiṅ karoṣi devadatta*) 'What are you doing, Devadatta?'

the finite verb form *karoṣi* (< *karoṣi*: A 8.4.66 [622]) following the nominal pada *kim* lacks an udātta vowel, as does the vocative *devadatta*. In

(117) **इमं मे गङ्गे यमुने सरस्वति शुतुद्रि स्तोमं सचता ...**
(*imáṁ me gaṅge yamune sarasvati śútudri stómaṁ sacatā* ... [RV 10.75.5ab] 'Gaṅgā, Yamunā, Sarasvatī, Śutudrī, accompany this my chant of praise ...'

the vocatives *gaṅge, yamune, sarasvati* have no udātta vowel,

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but *śūtùdri* at the beginning of a verse section (*pāda*), is accented according to A 6.1.198, and the verb form *sacatā* (2pl. imper.) lacks a high-pitched vowel.

As provided for in

A 8.1.70: **गतिर्गतौ** (*gatir gatau*)

a gati (A 1.4.60-74 [55]) has no high-pitched vowel if it occurs before another gati (*gatau*), as in *abhyúddharati* (< *abhi úd harati*) 'fetches out'.

616 Under particular circumstances, verb forms that follow non-verbal forms have high-pitched vowels, contrary to the general rule A 8.1.28 (615), so that a series of exceptions to this sūtra is formulated, providing that a pada does not (*na*) lack an udātta vowel. Four such rules are:

A 8.1.29: **न लुट्** (*na luṭ*)

A 8.1.30: **निपातैर्यद्यदिहन्तकुविन्नेच्चेच्चण्कच्चिद्यत्र-युक्तम्** (*nipātair yadyadihantakuvinnecceccaṇ-kaccidyatrayuktam*)

A 8.1.34: **हि च** (*hi ca*)

A 8.1.66: **यद्वृत्तान्नित्यम्** (*yadvṛttān nityam*)

A verb form with an ending that replaces *luṭ* (A 3.3.15, 3.1.33, 2.4.85 [233, 236, 403]) has a high-pitched vowel, as in *śváḥ kartā́* '... will do it tomorrow', *śváḥ kartā́rau, śváḥ kartā́raḥ*. A pada that terminates in a verb ending has an udātta vowel if it is syntactically linked (*yuktam*) with any of a set of particles (*nipātaiḥ*: 55): *yat* 'that, if', *yadi* 'if', *hanta* 'oh, well', *kuvit* 'perhaps (and interrogatory)', *net* 'if not, lest', *cet, caṇ,* 'if', *kaccit* 'would that [utinam]', *yatra* 'where, in which', *hi* 'because, for'. A finite verb form also obligatorily (*nityam*) has a high-pitched vowel if it is construed with a preceding form of the relative pronoun *yad* (*yadvṛttāt* [*padāt*]). For example:

(118) **यद॑ग्ने दिवि॒जा अस्य॑प्सु॒जा वा॑ ... । तन्त्वा॑**

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गीर्भिर्हवामहे॥ (*yád àgne divijā́ ásy àpsujā́ vā ... tán tvā́ gīrbhír havāmahe* [RV 8.43.28]) 'Agni, we call on you with our chants, whether you are (*ási*) born in heaven or in the water.'

(119) पूर्वीरिन्द्रस्य रातयो न वि दस्यन्त्यूतयः। यदी वाजस्य गोमतः स्तोतृभ्यो मंहते मघम्॥ (*pūrvír índrasya rātáyo ná ví dasyanty ūtáyaḥ। yádī vā́jasya gómataḥ stotṛ́bhyo máṁhate maghám* [RV 1.11.3]) 'The gifts Indra has given earlier, his help, do not run out if he grants (*máṁhate*) his gift of booty rich in cattle to those who chant his praises.'

(120) ते होचुर्हन्तेमां पृथिवीं वि भजामहै ... (*te hocur hantemā̃ṁ pṛthivī̃ṁ vi bhajāmahai* [ŚBr. 1.2.5.2]) 'They (the Asuras) said, "Well, let us divide (*vi bhajāmahai*) this earth among ourselves ..."'

(121) कुविन्नो अग्निरुचथस्य वीरसद्... कुविद्वसुभिः काममावरत्। (*kuvín no agnír ucáthasya vī́r ásad ... kuvíd vásubhiḥ kā́mam ā́ vāràt* [RV 1.143.6ab]) 'Will Agni be (*ásat*) a seeker after our hymn ..., will he accomplish (*ā́ vāràt*) our wish with treasure?'

(122) अग्नेर्वर्म परि गोभिर्व्ययस्व ...। नेत्त्वा ... विधक्ष्यन् पर्यङ्खयाते॥ (*agnér várma pári góbhir vyayasva ... nét tvā ... ví dhakṣyán pàry aṅkhāyàte* [RV10.16.7]) 'Wrap yourself in these parts of the sacrificial cow as an armor against the fire ... lest it envelop (*pàry aṅkhāyàte*) you ... to burn you throughout.'

(123) अर्थिनो यन्ति चेदर्थमिच्छानिद्दुषो रातिम्। (*arthíno yánti céd árthaṁ gácchān íd dadúṣo rātím* [RV 8.79.5ab]) 'If, seeking their end, they go (*yánti*) about their purpose, they will indeed attain (*gácchān íd*) the gift of the giver.'

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(124) त्वञ्च॑ सोम नो॒ वशो॑ जी॒वातु॒न्न म॑रामहे। (*tváñ ca soma no váśo jívātun ná marāmahe* [RV 1.91.6ab]) 'Soma, if you wish (*váśaḥ*) us to live, we will not die.'

(125) श॒तमि॑न्नु श॒रदो॒ अन्ति॑ देवा यत्रा॑ नश्च॒क्रा ज॒रस॑न्तनू॒नाम्। पु॒त्रासो॒ यत्र॑ पि॒तरो॒ भव॑न्ति। (*śatám ín nú śarádo ánti devā yátrā naś cakré jarásan tanūnām/ putráso yátra pitáro bhávanti* [RV 1.89.9a-c]) 'Gods, here are one hundred autumns before us, in which you decreed (*cakré* 'made') for us the aging of our bodies, in which sons become (*bhávanti*) fathers.'

(126) अ॒स्माञ्च॒ ताँश्च॒ प्र हि नेषि॒ वस्य॒ आ। (*asmā́ñ ca tā́ṃś ca prá hí néṣi vásya á* [RV 2.1.16c]) '(Agni), lead (*prá hí néṣi*) both us and them to the greater treasure.'

(127) ... यस्स्तो॒तृभ्यो॒ ह॒व्यो॒ अस्ति॒ ... (... *yás stotṛ́bhyo hávyo ásti*... [RV 1.33.2d]) '... (Indra,) who is (*ásti*) one to be called upon by singers of praise ...'

617 A gati lacks a high-pitched vowel not only if it is followed by another gati (A 8.1.70 [615]) but also before a finite verb form (*tiṅi*) that contains an udātta vowel (*udāttavati*):

A 8.1.71: तिङि चोदात्तवति। (*tiṅi codāttavati*)

For example, the gati elements *ā* and *pari* of *ā várāt* and *páry arikhāyāte* in (121)-(122) (616) lack high pitch.

618 Consider now the sequences अग्न॒ इन्द्र॒ वरु॑ण॒ मित्र॒ देवा॒ः ... (*ágna índra váruṇa mítra dévāḥ* ... [RV 5.46.2a]) 'Agni, Indra, Varuṇa, Mitra, gods', वायो॑ या॒हि ... (*vā́yo yāhí*... [RV 8.26.23a]) 'Vāyu, go ...', अग्ने॒ तव॒ श्रवो॒ ... (*ágne táva śrávo* ... [RV 10.140.1a]) 'Agni, your fame ...', इन्द्र॒ तु॒भ्य॒म् ... (*índra túbhyam* ... [RV 1.80.7a]) 'Indra, for you ...' Each of these contains a

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verse-initial vocative form, accented in accordance with A 6.1.198 (609). Contrary to A 8.1.19, 28 (615), however, the vocatives *índra, mítra, váruṇa,* and *dévāḥ* have high-pitched vowels, as does the verb form *yāhí,* and contrary to A 8.1.22 (507), the low-pitched pronominal form *te* does not occur instead of *táva* and *túbhyam* after the padas *ágne, índra.* In accordance with these facts,

A 8.1.72: **आमन्त्रितम्पूर्वमविद्यमानवत्।** (*āmantritam pūrvam avidyamānavat*)

provides that a vocative pada (*āmantritam*) that precedes (*pūrvam*) another pada behaves as though it were not present (*avidyamānavat*). In all the examples given here, then, the verse-initial vocative is treated as though it were absent, so that the following padas are not subject to accentual rules and replacements that depend on the presence of a preceding pada. In (117) (615), even if each of the vocatives *gaṇge* and so on is treated as nonexistent, this does not result in any of them having an udātta vowel, since the pada *me* still precedes.

Now, A 8.1.72 would allow the second vocative in an example like **अग्ने गृहपते ...** (*ágne gṛhapate ...* [TS 2.4.5.2]) 'Agni, (you in your guise of) master of the house ...' to have a high-pitched vowel. Consequently,

A 8.1.73: **नामन्त्रिते समानाधिकरणे सामान्यवचनम्।** (*nāmantrite samānādhikaraṇe sāmānyavacanam*)

denies, under particular circumstances, what is provided for by the previous sūtra: A vocative pada is not (*na*) treated as nonexistent if it is followed by a coreferential (*samānādhikaraṇe*) vocative pada (*āmantrite*), provided the first term has a general signification (*sāmānyavacanam*) related to that of the second.

619 The second item gotten through syntactic doubling (see 370) is not only given the class name *āmreḍitam* (A 8.1.2 [50]), it also generally lacks any high-pitched vowel (*anudāttam*):

A 8.1.3: **अनुदात्तञ्च।** (*anudāttañ ca*)

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For example, the second pada in (102a) and (102b) has no udātta vowel: *grā́mo grāmo, púruṣaḥ puruṣo.* See also A 8.2.95 (621).

620 A 8.2.5 (610) lets a single replacement for two vowels, one of which is high-pitched, necessarily be high-pitched only if the second segment in question is not a pada-initial (*padādau*) anudātta vowel (*anudātte*). For according to

A 8.2.6: **स्वरितो वानुदात्ते पदादौ।** (*svarito vānudātte padādau*)

a svarita vowel optionally (*vā*) is the single substitute for a high-pitched vowel and a pada-initial low-pitched one. For example, the udātta vowel of *té* (nom. pl. masc.) 'they' derives from high-pitched *á* and low-pitched *i* (A 3.1.4 [592]): *tád-as* > *táa-as* (A 7.2.102 [476]) > *tá-as* (A 6.1.97 [531]) > *tá-i* (A 7.1.17 [492]) > *té* (A 6.1.87 [528]). By A 8.2.5, the single vowel that replaces *-á-a-* and *-á-i* is high-pitched. In accordance with A 8.1.28 (615), the verb form *avardhanta* (3pl. impfct.) 'they grew' has no high-pitched vowel if it follows *té*, and according to A 8.2.6, the single vowel *-e* that substitutes for both *-é* and *a-* (A 6.1.109 [533]) is either a svarita or a high pitched vowel: *tèvardhanta / tévardhanta* (RV 1.85.7, where the traditional text has a svarita vowel).

621 An utterance used in calling someone from afar (*dūrāt-sambuddhau*) is characterized by its general lack of pitch variations, a single continuous pitch level (*ekaśruti* [*vākyam*] 'monotone') approximating a high pitch:

A 1.2.33: **एकश्रुति दूरात्सम्बुद्धौ।** (*ekaśruti dūrātsambuddhau*)

This does not hold for all the vowels of such an utterance, however, since the last vowel is protracted and made high-pitched. A series of sūtras, headed by

A 8.2.82: **वाक्यस्य टेः प्लुत उदात्तः।** (*vākyasya ṭeḥ pluta udāttaḥ*)

gives conditions under which the vowel of the *ṭi* (*ṭeḥ*: A 1.1.64 [41]) of an utterance (*vākyasya*) is replaced by a high-pitched

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vowel (*udāttaḥ*) that is extra-long (*plutaḥ*: A 1.2.27 [35]). Two sūtras of this section are:

A 8.2.83: **प्रत्यभिवादेऽशूद्रे।** (*pratyabhivāde'śūdre*)

A 8.2.84: **दूराद्धूते च।** (*dūrāddhūte ca*)

which provide for this vowel protraction and accentuation in an utterance used to return a greeting (*pratyabhivāde*) to someone other than a Śūdra (*aśūdre*) or used in calling someone from afar (*dūrāddhūte*). For example, the final vowels of

(128) **आयुष्मानेधिदेवदत्त३।** (*āyuṣmān edhi devadattá3*) 'Be long-lived, Devadatta.'

(129) **आ गच्छ देवदत्त३।** (*ā gaccha devadattá3*) 'Come here, Devadatta.'

are protracted and high-pitched. In (128), moreover, one also has the regular pitch variation associated with padas in utterances, which is not the case for (129). A 1.2.33 first lets the vowels of this utterance be pronounced at a level relatively close to that of high-pitched vowels but without variation; then A 8.2.84 applies to replace the final vowel with a trimoric high-pitched segment.

The following rule, also in the section headed by A 8.2.82, concerns āmreḍita elements:

A 8.2.95: **आम्रेडितम्भर्त्सने।** (*āmreḍitam bhartsane*)

If syntactic doubling occurs under the condition that a threat is expressed (*bhartsane*), the last vowel of the āmreḍita element is protracted and high-pitched; e.g., *caurá3* in (108) (370).

622 Once accentual adjustments have been made as described, so that each pada of an utterance generally contains no more than one high-pitched vowel, though some may have none, another replacement applies. As provided for in

A 8.4.66: **उदात्तादनुदात्तस्यस्वरितः।** (*udāttād anudāttasya svaritaḥ*)

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a svarita vowel (*svaritaḥ*) replaces a low-pitched vowel (*anuddāttasya*) after a vowel with high pitch (*udāttāt*). For example, *agne* of (118) (616) starts off with a low-pitched initial vowel, which is replaced by a svarita vowel after *yád*: *yád àgne*.

In connection with this, as in the case of several other accentual processes, there is dialectal variation. Thus, according to

A 8.4.67: **नोदात्तस्वरितोदयमगार्ग्यकाश्यपगालवानाम्।**

(*nodāttasvaritodayam agārgyakāśyapagālavānām*)

contrary to A 8.4.66, an anudātta vowel is not (*na*) subject to replacement by a svarita if it is followed by an udātta or svarita vowel (*udāttasvaritodayam*), except in the opinion of Gārgya, Kāśyapa, and Gālava (*agārgyakāśyapagālavānām*). For example, *gárgya*, a derivate with the taddhita suffix *yañ* (A 4.1.105 [335]), has high-pitch on its first vowel (A 6.1.197 [600]), so that a pada like *gárgya-s* has a low-pitched affixal vowel. The derivate *tátra*, with the taddhita affix *tral* (A 5.3.10 [349]), has high pitch on the presuffixal vowel (A 6.1.193 [600]), and the derivate *kvà* (affix *at*: A 5.3.12, 7.2.105 [349, 487]) contains a svarita vowel (A 6.1.185 [599]). Before the padas *tátra, kvà*, then, *gárgyas* keeps its low-pitched suffix vowel, except in the dialects accounted for by Gārgya, Kāśyapa, and Gālava: *gárgyas tátra, gárgyaḥ kvà*, and *gárgyàs tátra, gárgyàḥ kvà*.

Moreover, an anudātta vowel in such contexts is not simply low-pitched. As provided for in

A 1.2.39: **स्वरितात्संहितायामनुदात्तानाम् (एकश्रुति)**

(*svaritāt saṁhitāyām anudāttānām* [*ekaśruti* 33])

A 1.2.40: **उदात्तस्वरितपरस्यसन्नतरः।**

(*udāttasvaritaparasya sannataraḥ*)

anudātta vowels (*anudāttānām*) that follow a svarita vowel (*svaritāt*) in an uninterrupted sequence with close junction (*saṁhitāyām*: A 1.4.109 [42]) are pronounced monontone, at a

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level close to that of high-pitched vowel, but if an anudātta vowel is followed by a high-pitched or svarita vowel (*udāttasvaritaparasya*), one has instead a vowel pronounced lower (*sannataraḥ*) than a mere anudātta. Thus, the vowels of *gaṅge* and so on in (117) (615) are pronounced in a monotone, up to the *-i* of *sarasvati*, which is more depressed, since a high-pitched vowel follows in *śútùdri*, and the anudātta element of *gắrgyas* in *gắrgyas tátrà, gắrgyaḥ kvà* also is pronounced at a level relatively lower than a mere anudātta, since the next vowels are high-pitched and svarita vowels.

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3. GENERAL PRINCIPLES OBSERVED IN THE GRAMMAR

3.0. Introduction.

623 Pāṇini adheres to certain general principles in his grammar. These principles are not explicitly set forth in the Aṣṭādhyāyī, although Pāṇinian commentators, starting with Kātyāyana, do state them. Nevertheless, it is patent from the sūtras of the Aṣṭādhyāyī that Pāṇini does indeed observe the principles in question. In part II of my work I consider in some detail relations that obtain among rules in the Aṣṭādhyāyī and the principles Pāṇini observed in formulating these rule, so that it will suffice at present to summarize the principles to which Pāṇini adheres and to illustrate them with a few examples of sūtras already dealt with.

624 The very basis of Pāṇini's grammar is generalization. The sūtras he formulates constitute a set of statements meant to account for facts of usage by capturing what is common (*sāmānya*) to groups of entities and what is particular(*viśeṣa*) to subgroups of these. In this vein, Pāṇini formulates general rules (*utsarga*) and related exceptions (*apavāda*) to them. A general rule has a broad domain (*viṣaya*) that includes the whole domain of a related exception or part of it. An apavāda takes precedence over a related utsarga, so that it applies preferentially in its own domain. Once the domains of all possible exceptions to a general rule have been set aside, the remaining domain is the one in which the utsarga takes effect. Moreover, once an exception has taken effect, thus capturing its domain so that it is not vacuous, the general rule whose application it blocked in the first place can take effect if the conditions for its application are met. In certain instances, moreover, items that would require overly particular operations are given as ready made elements.

The principle that an exception blocks (*bādhate*) a related general rule does not hold in general for classificatory saṁjñāsūtras (see 32). The norm observed here is concurrent

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application of two or more class names (*saṁjñāsamāveśa*), thus accounting for classes and subclasses. Where it is necessary to have disjunct classes, then, the sūtras in question are stated in the section headed by A 1.4.1 (109).

625 In accordance with the division of utterances into constituent padas and of padas into stems and affixes (see 46, 212), a principle associated with bracketing is observed: An internally conditioned operation (*antaraṅgaṁ kāryam*) takes precedence over one which is externally conditioned (*bahiraṅgam*). Thus, operations that apply within a single pada are carried out before one proceeds to operations that take effect across syntactic pada boundaries. And in padas with complex stems, of the type shown in (13), one works outwardly from interior brackets, so that an operation on B^{v} conditioned by A^{v} takes precedence over an operation on $[[B^{v}]_{a}\ (A^{v})]_{a}$ conditioned by an ending.

626 Given a context such that the operation provided for by either of two rules R_1, R_2 could possibly apply, one operation is said to apply necessarily (*nityam* 'obligatory'), the other not necessarily (*anityam*) if the following conditions are met: Once the operation given in R_1 has taken effect, the operation provided for by R_2 can no longer take effect, because the conditions required for this have been eliminated; even after R_2 has come into play, R_1 can still apply, since its conditions have not been eliminated. A nitya operation provided by such a rule R_1 takes precedence over an anitya operation by a rule R_2.

627 If two operations are incompatible but the domain of one is not included in the domain of another, so that one is not an exception to the other (624), the norm is that both apply, alternately. For example, A 3.1.133 (248) allows both *ṇvul* and *tṛc* to follow a verb, but only one affix can occur immediately after a base at one time. The sūtra allows both of the affixes to occur, alternately. There are instances, however, where only one of two conflicting operations should

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apply. In such cases, the rules in question are formulated in a particular order and made subject to A 1.4.2 (110): What is provided for by a later rule takes precedence over the provision made in an earlier rule. Since A 1.4.2 is valid with respect to the rules headed by A 1.4.1 (109), only one of two conflicting operations is allowed to apply to any given entity.

628 Another set of sūtras that calls for extrinsic ordering is the group that makes up the tripādī. A rule R +1 is regularly suspended with respect to any preceding sūtra (A 8.2.1 [109]). Rule suspension also applies in other instances, as provided for in A 6.1.86 (110). There are, in addition, cases where an operation applies preferentially with respect to another because of a general principle, yet the effect (*kārya* 'what is to be done') produced thereby has to be suspended in order to preclude the application of another rule. Rules concerning such cases are given in the section headed by A 6.4.22 (111).

629 Obviously, sūtras that must be subject to a heading have of necessity to be stated in the same section of the grammar, under the heading in question. On the other hand, related general rules and exceptions need not be put together. The very relation between their domains that makes one a general rule and the other its exception serves to bring such rules together. In Pāṇinīya parlance, an utsarga and related apavādas come together to form a single context (*ekavākya* 'one utterance', *ekavākyatā* 'being one utterance'). Now, headings such as A 4.1.1, 6.4.1 (105) also come together with other sūtras to form single contexts. Indeed such headings are actually incorporated with subsequent sūtras to constitute single sentences (*padaikavākyatā* 'being a single utterance of constituent padas'), so much so that the form of a heading is contextually modified in accordance with the syntax of other sūtras (see 121-127).

Ancillary sūtras that are not headings also are brought together with rules they serve to interpret. Thus, depending on the sūtra with which A 1.1.45 (38) is brought together, this saṁjñāsūtra is understood to provide that the replacement of

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semivowels by vowels is called *saṃprasāraṇa* (e.g., A 6.1.15 [388]) or that the vowels gotten by such substitution have this class name (e.g., A 6.1.108 [533]). Further, metarules come together with sūtras for the interpretation of which they are required. For example, A 1.1.3, 5 (97-98) are brought together with A 7.3.84, 86 (127). Thus, A 1.1.5 does not provide that guṇa and vṛddhi vowels may not substitute for *i-*, *u-*, *ṛ-*, or *ḷ-* vowels if any item marked with *k* or *ṅ* follows. Indeed, such an interpretation of A 1.1.5 conflicts directly with what Pāṇini does in deriving forms such as *kurutas* (see 644). Together with operational rules like A 7.3.84, 86, this metarule provides that guṇa substitution does not apply if the affix taken as a possible condition for the replacement in a stem is marked with *k*, *g*, or *ṅ*.

3.1. General rules and exceptions.

630 A 6.1.77 (125) is the general rule of semivowel substitution: *y v r l*, respectively, substitute for *i u ṛ ḷ* and vowels homogeneous with these before another vowel. A 6.4.77 (452) is an exception to this general rule: final *i*-and *u*-vowels of certain stems are replaced by *iyaṅ* and *uvaṅ* before vowels of suffixes. Since an exception blocks the application of a related general rule, then, A 6.4.77 would apply instead of A 6.1.77 to the stem *i-* of *i-anti*. The desired form *yanti* cannot be gotten by applying the general rule, so that a still more specific sūtra, an exception to A 6.4.77, is formulated: A 6.4.81 lets *y* replace the *i-* of the verb *iṇ* before a vowel of an affix. That Pāṇini is required to include the rule A 6.4.81 within the Aṣṭadhyāyī in order to derive a form like *yanti* shows that he does indeed operate with the general principle that exceptions take precedence over and block the application of related general rules.

631 A 3.2.1-3 (295) provide for kṛt affixes to follow verbs construed with nominals denoting objects. The first sūtra lets *aṇ* follow any verb under these conditions, but A 3.2.3 applies

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with respect to particular verbs, those that end in *-ā,* on condition that they not occur with preverbs. This exception to the general rule blocks the latter, which can therefore not apply to introduce *aṇ* after *hvā, vā,* or *mā.* In order to allow for derivates like *svargahvāya,* then, a still more specific rule, which allows *aṇ* after these particular verbs, is required.

A 3.1.96 (121) allows the kṛtya suffixes *tavya, tavyat,* and *anīyar* to occur with any verb. A 3.1.97 (122), on the other hand, introduces *yat* after a subset of verbs, those that end in vowels, so that this sūtra is an exception to the general rule A 3.1.96. Since an exception blocks the application of a related general rule, then, special provision must be made to allow not only *yat* but also *tavya, tavyat,* and *anīyar* after verbs that end in vowels: A 3.1.94 (110, 123) lets affixes introduced by general rules and their exceptions alternate, provided they are not homophonous.

632 A 7.1.13 (492) lets *ya* substitute for the ending *ṅe* after any nominal stem in *-a.* A 7.1.14 is an exception to this rule: If the stem in *-a* is a pronominal, *ṅe* is replaced by *smai* instead of *ya.*

A 7.3.103 (482) is an exception to A 7.3.102: Before a bahuvacana ending that begins with *bh,* the *-a* of a nominal stem is replaced by *-e* instead of *-a.* A 6.4.3 and 7.1.9 (468, 492) also are exceptions to A 7.3.103. This last sūtra allows *-ā* to replace *-a* of a stem before an ending that begins with any sound denoted by *yañ,* including *n* and *bh.* However, A 6.4.3 provides that a long vowel replaces a final stem vowel before the ending *nām* in particular, and A 7.1.9 lets *ais* substitute for *bhis* after a stem in *-a.*

633 A 6.4.71–72 (238) both introduce initial augments to stems followed by endings that derive from *luṅ, laṅ, lṛṅ.* The first is a general rule, which allows the augment *aṭ* for any of the stems in question. The second sūtra is an exception to this: If the stem begins with a vowel, it receives the augment *āṭ* instead of *aṭ.*

634 A 1.1.62 (103) is a general metarule concerning affix

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deletion: When any affix is dropped, the operation it would condition if present still takes effect. A 1.1.63 is an exception to this: If the zero replacement for an affix is one denoted by a term with *lu*, an operation conditioned by that affix for its stem does not then take effect.

635 Obviously, an exception to a general rule can be a negative rule. Nor is this limited to metarules. For example, A 8.2.79 (552) disallows a sound replacement tentatively allowed by the more general rule A 8.2.77. There are more complex instances, such that a negative rule is an exception to a sūtra that is itself an exception to a still more general rule, which is then allowed to apply because its exception has been disallowed. For example, consider again A 6.1.102, 104-105 (532). According to the first of these sūtras, given two contiguous vowels such that the second belongs to a nominal ending of the first or second triplet, both are replaced by a long vowel homogeneous with the first one. This replacement applies in cases like *agni-au* and *vāyu-au*. In such instances, A 6.1.102 is an exception to the general rules A 6.1.77 (125), whereby *y* and *v* would replace *i* and *u* before *au*. By the same token, A 6.1.102 would not allow semivowel replacement in instances such as *kumārī-au* and *kumārī-as*. A 6.1.102 would also block A 6.1.87-88 (528-529), not allowing guṇa and vṛddhi vowels as the single substitutes for contiguous vowels in cases such as *phala-ī* and *vṛkṣa-au*. The negative rules A 6.1.104-105, which are exceptions to A 6.1.102, prevent this sūtra from blocking the still more general rules in question.

636 In some cases, the domain of an exception is totally included in the domain of a related general rule, so that in every instance where the exception is to apply the general rule could also apply and would indeed take effect in the absence of its exception. For example, the verb *iṇ* is merely one possible stem with *-i* before a vocalic ending, so that the domain of A 6.4.81 is completely included in the domain of A 6.4.77 (see 630). Similarly, the domain covered by A 6.1.77 totally includes the domain of A 6.4.77. Again, any verb in *-ā* is

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indeed a verb, so that the domain of the general rule A 3.2.1 completely includes the domain of the exception A 3.2.3 (see 631), and all pronominals (*sarvanāman*) belong to the class of nominal bases (*prātipadika*), so that the domain of A 7.1.14 is included fully in the domain of A 7.1.13 (see 632).

On the other hand, an included domain may be part of a larger domain where two sūtras which also have independent domains of their own overlap. Here too the rule concerning the narrower part of the overlapping domain blocks the other by what I call partial or limited blocking. Consider again A 6.1.77 (125) and A 6.1.101 (532). Let us reword the sūtras as follows:

6.1.77a: **इको यणसवर्णेऽचि।** (*iko yaṇ asavarṇe'ci*)

6.1.101a: **आत्सवर्णे दीर्घः।** (*āt savarṇe dīrghaḥ*)

6.1.101b: **इकः सवर्णे दीर्घः।** (*ikaḥ savarṇe dīrghaḥ*)

These are complementary rules with separate domains. 6.1.77a lets an *i- u- ṛ-* or *ḷ-*vowel be replaced by the corresponding semivowel before a vowel that is not homogeneous with it (*asavarṇe*). By 6.1.101a, *a* or *ā* and a following vowel that is homogeneous with it are both replaced by a single long vowel. Finally, according to 6.1.101b, an *i- u- ṛ-* or *ḷ-*vowel and a following vowel homogeneous with it are both replaced by a single long vowel. The domains of 6.1.77a, 6.1.101a are the samé as the independent domains which are exclusive to A 6.1.77, 6.1.101: D^1: *i ī u ū ṛ ṝ ḷ* + V, D^2: *a ā* + *a ā*. The remaining domain, covered by 6.1.101b, is the overlapping domain common to A 6.1.77, 101: D^3: *i- u- ṛ- ḷ-*vowels + *i- u- ṛ- ḷ-*vowels. There is indeed overlap, because, unlike 6.1.77a, A 6.1.77 does not specify that the right context must be a dissimilar vowel. However, since A 6.1.101 does specify that the two contiguous vowels subject to replacement must be homogeneous, it is the more particular rule. It captures the domain D^3, leaving D^1 as the domain in which the general rule A 6.1.77 applies.

The relation between A 7.3.102 and A 7.3.103 (see 632) is comparable. The first rule provides that the *-a* of a stem is

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replaced by the long vowel *-ā* before a nominal ending beginning with a sound of the group denoted by *yañ*. The sounds that come into question are *y* and *bh* of the endings *ya, bhyām, bhyas*. A 7.3.103 lets *-e* replace *-a* of a stem before a bahuvacana ending that begins with a sound denoted by *jhal*. The endings that come into question are *bhyas* and *sup*. Thus, each rule has a domain in which the other cannot possibly apply: *-a* followed by *ya* or *bhyām* for A 7.3.102 and *-a* followed by *sup* for A 7.3.103. The two sūtras also share an overlapping domain, since *bh* is included in the referents of both the abbreviations *yañ* and *jhal*. However, the bahuvacana ending *bhyas* is only one of the possible nominal endings that begin with *bh*, so that within the overlapping domain, there is a specific one, in which A 7.3.103 applies, blocking A 7.3.102.

Similarly, consider again A 7.3.111 and A 7.1.73 (484, 488). Each of these rules has an independent domain. The first applies to let guṇa substitution apply to non-neuter ghi stems before endings marked with *ṅi*; the second rule introduces the augment *num* to neuter stems in *-i -u -ṛ* before endings other than those marked with *ṅi*. The domains of the two sūtras overlap where a neuter stem in *-i* or *-u* is followed by an ending marked with *ṅi*. Since, however, A 7.1.73 concerns neuter stems in particular, its domain is the more specific, so that it takes precedence.

637 From the examples considered, it is clear that the Aṣṭādhyāyī contains whole networks of related sūtras. Thus, A 6.1.87 (528) is formulated as a general phonological rule: *a* or *ā* and a following vowel are both replaced by a single guṇa vowel. This is blocked by a more specific phonological rule, A 6.1.88 (529): a vṛddhi vowel is the single replacemenent for *a* or *ā* and a following *e o ai au*. On the other hand, if an *a*-vowel occurs before a vowel homogeneous with it, that is, before another *a*-vowel, then the single substitute for both is a long vowel *ā*, according to A 6.1.101 (532), another exception to A 6.1.87. However, if the first of two contiguous vowels is short *a* in the interior of a pada and this is followed by a guṇa

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vowel, according to A 6.1.97 (531), the single replacement for both is the latter, so that *-a-* is the substitute for *-a-a-*, as in *pacanti* 'they are cooking' (< *pac-a-anti*). In a still more specific collocation, such that pada-interior *-a-* occurs before *a-* of the endings *jas, śas*, A 6.1.102 applies to replace the two contiguous vowels with a single long one homogeneous with the first: *vṛkṣa-as* > *vṛkṣās, vṛkṣa-as* > *vṛkṣās* > *vṛkṣān* (A 6.1.103). And if pada-interior *-a-* occurs before the *a-* of *-am*, it is the single replacement for both contiguous vowels, by A 6.1.107 (533). Moreover, the *-a* of a stem is deleted before the vowel of an ārdhadhātuka affix (A 6.4.48 [450]), as in *cikīrṣaka* (< ... *-sa-aka*), and *-a* or *-ā* is dropped before a taddhita affix or a feminine suffix *ī* (A 6.4.148 [504]), as in *dākṣi* (< ... *dakṣa-i*), *gaurī* (< *gaura-ī*).

638 In view of what has been said, it is also patent that in cases where more than one rule could be used to obtain the required result, the more specific rule alone applies. For example, given *ta-a-am* (< *tad-am*: A 7.2.102 [476]), letting A 6.1.87 (528) apply to substitute the guṇa vowel *a* for the contiguous vowels of *ta-a-* or having A 6.1.97 (531) apply to replace both these vowels with the second one alone would give the results required in the derivation. The more specific sūtra A 6.1.97 alone applies. Similarly, A 6.1.87, 6.1.97 or 6.1.107 (533) would all give the desired result *tam* from *ta-am*, but only the last rule applies here.

639 As I pointed out in 624, once a particular rule has applied, blocking a general rule to which it is an exception, the general rule can then apply if its conditions are met. Consider the first stage in the derivation of the desiderative stems *jijīṣa* 'wish to conquer' and *tuṣṭūṣa* 'wish to praise'. Since *san* is an ārdhadhātuka suffix, A 7.3.84 (127) comes under consideration as well as A 6.4.16 (422). Clearly, however, the latter is an exception to the former: A 7.3.84 provides for guṇa vowels to replace stem-final *i- u- ṛ-* and *ḷ-* vowels before any sārvadhātuka or ārdhadhātuka affix, but A 6.4.16 lets a long vowel substitute for a final stem vowel before a particular

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ārdhadhātuka affix, *san*. Thus, this sūtra alone applies, to give *jī-sa-*, *stū-sa-*. Of course, A 7.3.84 could now apply to *je-sa* and *sto-sa*. If it did, one would derive **jijeṣa*, **tuṣṭoṣa* instead of *jijīṣa* and *tuṣṭūṣa*. This is precluded, however, since A 1.2.9 (515) assigns the marker *k* to *san* in such contexts, so that this affix now does not condition guṇa substitution in its stem.

Moreover, there are instances where a general rule has indeed to apply after being blocked. In this connection, let us consider the derivation of *khaṭvāyām* 'on the bed'. Given *khaṭvā-i*, two sūtras come under consideration: A 7.3.116, 113 (497, 499). By limited blocking, the former takes effect, so that the ending *ṅi* is replaced by *ām*: *khaṭvā-i* > *khaṭvā-ām*. A 7.3.113 must then apply: *khaṭvā-ām* > *khaṭvā-yāām* > *khaṭvāyām* (A 6.1.101 [532]). If the more general rule did not apply, despite having been blocked earlier, one would derive *khaṭvām*, which is a correct form, but an accusative (< *khaṭvā-am*), not a locative.

640 As I have pointed out (45), Pāṇini operates with classes and subclasses of entities in respect of operations. Items which have the name *ghu* by A 1.1.20 (51) are a subgroup of elements called *dhātu* (A 1.3.1 [47]). Since they are recognized as verbs, they take verbal affixes (A 3.1.91 [66]) such as L-affixes (A 3.4.69 [232]). Nominal units to which the class names *sarvanāman*, *avyaya*, and *saṅkhyā* are assigned (A 1.1.27-36, 37-41, 23 [53, 54, 59]) also are called *prātipadika* (A 1.2.45-46 [48]), so that they can be followed by nominal endings (A 4.1.1 [105]). An item which is called *ṣaṣ* by A 1.1.24-25 (60) also has the class name *saṅkhyā*, so that, for example, *pañcan* enters into the derivate *pañcadhā* 'in five ways', with the suffix *dhā*, which is introduced to items that contain bases of the saṅkhyā group. Again, an item to which A 3.1.95 (66) assigns the name *kṛtya* also is called *kṛt* (A 3.1.93), and all kṛt elements have the class name *pratyaya* by 3.1.1 (15). Similarly, *tarap* and *tamap* are called *gha* (A 1.1.22 [73]), *taddhita* (A 4.1.76 [70]) and *pratyaya*.

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Particular saṁjñāsūtras like A 1.1.20 have domains that are totally included in the domains of related general rules like A 1.3.1. So far as such classificatory rules are concerned, nevertheless, one does not block the other, so that two or more class names apply simultaneously. That is, Pāṇini recognizes, as he must, that given elements may belong at once to subclasses and larger groups in which the subclasses are included.

641 There are cases where operations require that a given element which would otherwise be eligible for membership in more than one class belong exclusively to one. Classificatory rules concerning these are given in the section headed by A 1.4.1-2 (109-110).

Consider once more the derivation of *acīkarat* and *atatakṣat* (see 387). The former has *ī* instead of *a* in the abhyāsa syllable by A 7.4.93-94. Replacement by *ī* applies to *a* if the vowel in the stem that follows is laghu. Now, according to A 1.4.10 (37), a short vowel is assigned the class name *laghu*. The vowels of both *-kar-* and *-takṣ-* are short. They differ, however, in that the latter occurs before a consonant cluster, so that, by A 1.4.11, it is called *guru*. Nevertheless, the *a* of *-takṣ-* does not thereby cease to have the class name *hrasva* (A 1.2.27 [35]), so that, in terms of what usually holds for classificatory rules, this vowel could still be eligible for having the name *laghu*. If it were simultaneously labelled *laghu* and *guru*, one would derive not only *atatakṣat* but also **atītakṣat*. Since A 1.4.10-11 are stated under the heading of A 1.4.1, only one of the names in question may apply at once to any given entity. Assigning the name *laghu* by A 1.4.10 to a short vowel preceding a cluster is blocked by A 1.4.11, which is an exception to the more general rule A 1.4.10.

In the same vein, let us consider *anaiṣīt*, with *sic* and the augmented ending *ṭ* (A 3.1.44, 7.3.96 [236, 440]), together with the corresponding middle form *aneṣṭa*. By A 7.2.1 (412), the vṛddhi vowel *ai* replaces the *-ī* of *nī-* before *sic* that is followed by a parasmaipada ending. By A 1.4.99 (64) any

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replacement for an L-affix has the class name *parasmaipada*. The ending *ta* of *aneṣṭa* replaces the L-affix *luṅ*, just as the ending of *anaiṣīt* does, so that it could be eligible for being called not only *ātmanepada* by A 1.4.100 but also *parasmaipada* by A 1.4.99. If this were allowed, however, one would derive not only *aneṣṭa*, with guṇa substitution (A 7.3.84 [127]), but also **anaiṣṭa*. Hence, the classificatory rules in question are stated in the section headed by A 1.4.1: *ta* is exclusively called *ātmanepada*, by A 1.4.100, which blocks A 1.4.99.

The instrumental forms *chandasā* and *chandobhis* are derived from the stem *chandas-* 'meter' with the endings *ṭā, bhis*. To account for *chandobhis*, the *-s* of *chandas-* is replaced by *-R*: *chandas-bhis* > *chandaR-bhis* (A 8.2.66 [551]) > *chandaü-bhis* (A 6.1.114 [525]) > *chandobhis* (A 6.1.87 [528]). Replacing *-s* with *-R* depends on the classification of *chandas-* as a pada by A 1.4.17 (75). The ending *ṭā* is one of the elements referred to by *svādiṣu* of A 1.4.17, but it is vocalic, so that, by A 1.4.18, *chandas-* preceding this ending has the class name *bha*. If it also simultaneously belonged to the pada class, one would allow not only *chandasā* but also **chandarā*. This is precluded, since the classificatory rules in question are in the section which A 1.4.1 heads, so that only one class name is allowed, the one assigned by A 1.4.18, an exception to A 1.4.17.

Sentence (44) (247) contains the accusative *parṇaśālām*, derived from *parṇaśālā-am*, with the second-triplet ending *am*, introduced to signify an object (*karman*: A 2.3.2 [240]). In both (43) and (44), however, *parṇaśālā* refers to a locus (*ādhāra*) of an act, and A 1.4.45 (214) provides that a kāraka which plays this role is assigned the name *adhikaraṇa*. Were this classification allowed for deriving (44), one would have here also *parṇaśālāyām*, as in (43). This is not acceptable. It is also precluded, since the saṁjñāsūtras in question are stated under the heading of A 1.4.1; A 1.4.46 is an exception to A 1.4.45, so that it blocks the application of this general rule.

642 In particular instances, it is necessary to provide for simultaneous membership in two classes although the

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classificatory rules in question have also to be stated in the section headed by A 1.4.1. For example, to account for sentences like (41)-(42) (246), kārakas that function as means with respect to the act denoted by *div* have to be classed simultaneously as karaṇa and karman. Hence, A 1.4.43 (214) provides that such a kāraka is called both *karaṇa* and (*ca*) *karman*. Similarly, in order that compounds, which are uniquely assigned to one of the classes avyayībhāva, tatpuruṣa, bahuvrīhi, and dvandva, all have the class name *samāsa*, A 2.1.3 (26) provides that any item derived by subsequent rules, up to *kaḍāra*-(*prāk kaḍārāt*) in A 2.2.38, is assigned this name. And A 2.1.23 (314) lets a dvigu compound also have the class name *tatpuruṣa*.

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3.2. Internally and externally conditioned operations.

643 The verb form *ayajay* of

(130) अयजयिन्द्रम्। (*ayajay indram*) 'I venerated Indra.'

varies with *ayaja*^{y} and *ayaja* (A 8.3.18-19 [558]). Since *ayajay* derives from *ayaj-a-i*, in which the ending *iṭ* follows the stem *ayaja-*, one can account for the required form only if the replacement of *-a-* and *-i* by *-e* (A 6.1.87 [528]) takes effect before any other operation that could possibly apply to *ayaj-a-i indra-am*. That is, operations that apply within each of the padas of (130) take precedence over any operation that applies across a pada boundary: *ayaj-a-i* > *ayaje*; *indra-am* > *indram* (A 6.1.107 [533]); *ayaje indram* > *ayajay i-* (A 6.1.78 [524]). If, on the other hand, one allowed A 6.1.101 (532) to apply in *ayaj-a-i indra-am* so that the *-i* of the first pada and the *i-* of the following pada would be replaced by *ī*, the result would be an unacceptable utterance **ayajendram* (< *ayajaī-*).

Similarly, in the derivation of

(131) वसत्वत्र। (*vasatv atra*) 'Let him remain here.'

at the stage where one has *vasati atra*, the replacement of *i* by *u* in the verb ending that derives from *loṭ* (A 3.4.86 [398]) takes precedence over semivowel substitution conditioned by the vowel of the following pada (A 6.1.77 [125]): *vasati* > *vasatu*; *vasatu atra* > *vasatv atra*.

644 Consider now the form *kṣiyati* 'dwells', from the verb *kṣi* with the suffix *śa* (A 3.1.77 [157]). (((*kṣi-*)*a-*)*ti*), is a pada with two stems (*aṅga*: A 1.4.13 [46]): *kṣi-a-* is a complex stem relative to the ending *tip*, and *kṣi-* is a simple stem relative to the vikaraṇa *śa*. Since the stem *kṣi-a-* has a penultimate short vowel, A 7.3.86 (127) comes into consideration. Were this to apply, moreover, one would derive *kṣayati* instead of *kṣiyati*: *kṣi-a-ti* > *kṣe-a-ti* > *kṣayati* (A 6.1.78 [524]). This externally conditioned operation does not apply, however, since an internally conditioned one takes precedence. The affix *śa* is marked with *ñ* (A 1.2.4 [513]), so that, according to A 1.1.5 (98),

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it does not condition guṇa substitution, here by A 7.3.84 (127), in its stem. Instead, the *-i* of the verb *kṣi-* is replaced by *-iy* (A 6.4.77 [452]): *kṣi-a-ti* > *kṣiyati*. *kṣiy-a-* is still a stem in respect of *tip*, but this stem now does not have a short vowel as its penultimate sound, so that guṇa replacement by A 7.3.86 cannot take place.

Consider also the derivation of *kurutas* 'they two are making, doing': *kṛ-tas* > *kṛ-u-tas* (A 3.1.79 [157]) > *kar-u-tas* (A 7.3.84) > *kurutas* (A 6.4.110 [455]). Guṇa substitution in the stem *kṛ*, conditioned by the suffix *u*, takes effect to give *kar-*, the vowel of which is then replaced by *u*. The ending *tas* is marked with *ṅ*, so that it does not condition substitution on its stem: The *-u* of *kuru-* is not replaced by *-o* before this ending.

The ending *tas* also cannot condition guṇa replacement, by A 7.3.86, affecting the penultimate vowel of *kṛ-u-*. This does not mean, however, that this stem is absolutely forbidden from undergoing this replacement when *tas* follows, since the internally conditioned operation that takes effect before *u* has precedence over anything that is determined by an external condition. By the same token, the correct form *kṣiyati* from *kṣi-a-ti* is assured not because guṇa substitution is absolutely precluded by virtue of the marking given to *śa* but because the internally conditioned replacement of *-i* by *-iy* takes precedence over the externally conditioned possible guṇa substitution. In brief, each constituent stem in a complex stem is considered with respect to its affix and what this conditions, working outwardly from interior brackets.

645 The instrumental singular *kartryā́* derives from ((((*kar-*) *tṛc-*) *ṭ-*) *ā*), in which the vowel *ṛ* of the suffix *tṛc* is high-pitched (cf. 611). Working outwardly from interior brackets, semivowel replacement (A 6.1.77 [125]) applies first to *-ṛ-*, then to *-ṭ-*: *kar-tṛc-ṭ-ā* > *kar-tr-ṭ-ā* > *kartryā́*. In each instance, as shown, the low-pitched vowel following the semivowel replacing a high-pitched vowel gets high pitch, by A 6.1.174 (610). If, on the other hand, one allowed semivowel substitution first for *-ṭ-*, one would still derive *kartryā*, but

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not with the proper accentuation. At the stage *kartṛ-y-ā*, substituting *r* for *ṛ* is possible, by A 1.1.57 (101), but the ending *ā* now does not follow a semivowel that has replaced a high-pitched vowel, so that it is not eligible for high pitch by A 6.1.174. Of course, the preferred derivation and the bracketing illustrated here simply mirror the derivational history of *kartryā́*: the agentive suffix *ṭṛc* first follows the verbal base, then the feminine affix is added, and the ending follows the stem with this affix.

646 Let us now consider once more the desideratives *jijīṣa*. The replacement of *i* in *ji-sa* by a long vowel blocks guṇa substitution (see 639). A 6.4.16, which provides for long-vowel substitution in *ji-sa*, has also to be considered in connection with A 6.1.9 (382), whereby the first syllable of *ji-sa-* would be iterated. The two rules are not related as utsarga and apavāda. In this case desired results are gotten no matter which of these rules applies first. Thus, if A 6.4.16 applies first to give *jī-sa*, the syllable *jī* is doubled, giving *jī-jī-sa*, then the long vowel of the abhyāsa syllable *jī* is replaced by short *i* (A 7.4.59 [383]). On the other hand, if doubling applies first, the *-i* which precedes *-sa* in *ji-ji-sa* is still subject to replacement by *-ī* before *san*, since it is a stem-final vowel: *ji-ji-sa* (< *ji-sa*) begins with the element after which the affix was introduced, so that, according to A 1.4.13 (46), it is an aṅga with respect to this suffix.

The fact remains that in Pāṇini's derivational system it should be possible always to have one rule alone apply, and that the choice should be dictated by a recognized principle. Moreover, there are instances where only one derivational procedure will account for the desired results. For example, *dudyūṣa* 'wish to gamble' derives from *div-sa*. Suppose that doubling applied before the replacement of *-v* by *-ū* (A 6.4.19 [430]). This would serve to derive **didyūṣa* : *div-sa* > *div-div-sa* > *di-div-sa-* (A 7.4.60 [383]) > *di-diū-sa* > *di-dyū-sa* (A 6.1.77 [125]) > *didyūṣa* (A 8.3.59 [563]). Only if the *-v* of *div-* in *div-sa* is first replaced by *-ū* can one derive the

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required form: *div-sa* › *diū-sa* › *dyū-sa* › *dyū-dyū-sa* › *dū-dyū-sa* › *du-dyū-sa* › *dudyūṣa*. And the bracketing procedure under consideration dictates this order. A 6.1.9 states an operation which applies to items that end in *san* and *yaṅ*, so that doubling would be applicable to the first syllable of ((*div*-)*sa*), but A 6.4.19 provides for a replacement that applies to a stem before an affix such as *saṅ*. Obviously, this is the internally conditioned operation, which therefore takes precedence. Similarly, in ((*diū*-)*sa*) thus gotten, semivowel replacement takes precedence over doubling.

647 A situation which, though not essentially different, is a slight variant of the bracketing shown thus far may be illustrated by considering the third plural forms *juhvati* 'they are offering oblations' and *āyan* 'they went', derived respectively from *hu-laṭ* and *i-laṅ*. In each case the L-affix is replaced by the ending *jhi* (A 3.4.78 [232]), and the vikaraṇa *śap* is introduced between the verb and ending, then dropped (A 3.1.68, 2.4.72, 75 [157-158]). Two operations come into play for (((*hu*-)*Ø*-)*jhi*) thus obtained: doubling of the base syllable (A 6.1.10 [382]) and substituting *ant* for *jh* in the ending (A 7.1.3 [509]). Doubling is determined by the substitution of zero for *śap*, which immediately follows the verb, so that this operation is internally conditioned relative to the replacement of *jh* by *ant*, which takes effect on *jhi* after the entire stem: (((*hu*-)*Ø*-)*jhi*) › (((*hu-hu*-)*Ø*-)*jhi*). At this stage, another operation is internally conditioned relative to replacing *jh* with *ant*: *h* of the abhyāsa syllable is replaced by *jh* (A 7.4.62 [383]): *hu-hu-jhi* › *jhu-hu-jhi*. *jhi* follows an abhyasta stem, so that A 7.1.3 no longer comes into play, since it is now blocked by an exception to this rule, A 7.1.4: *jhu-hu-jhi* › *jhu-hu-ati* › *jhu-hv-ati* (A 6.4.87 [452]) › *juhvati* (A 8.4.54 [577]).

Two operations also come into consideration once the *i* of *jhi* has been dropped (A 3.4.100 [400]) to give ((*i*)-(*jh*)): *jh* is replaced by *ant* (A 7.1.3) or the augment *āṭ* is added to the stem (A 6.4.72 [238]). Note that A 7.1.3 has no condition for

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the operation stated except that *jh* be part of an affix, which necessarily occurs with a stem. In effect, the replacement of *jh* by *ant* applies simply to part of an ending pure and simple; hence, I have shown *jh* surrounded by brackets. On the other hand, introducing the augment *āṭ* depends on a stem's being followed by a particular ending. This operation is externally conditioned relative to the replacement of *jh* by *ant*, which therefore takes precedence: *i-jh* > *i-ant* > *y-ant* (A 6.4.81 [452]) > *āy-ant* (see 659) > *āyan* (A 8.2.23 [542]).

648 The bracketing principle described serves to decide which of two rules that could possibly apply is to take effect, and this holds only if the elements involved in the operations are actually bracketed with respect to each other at what we may call the same level of derivation. Thus, (130) contains two padas, (((*ayaj-*)*a-*)*i*) ((*indra-*)*am*), and their constituents, and (((*kṣi-*)*a-*)*ti*), ((((*kar-*)*ṭṛ-*)*i-*)*ā*) are single padas. In the first example (see 643), it is necessary to decide which operation takes precedence, one that applies to vowels within a pada or one that involves vowels of two padas. In the other instances (see 644-645), one has to decide which of two operations involving different stems within a pada is to apply first. There are other instances, where sūtras that could come under consideration concern padas and items belonging to a different "level" of derivation. For example, let us consider

(132) b. गोमान् प्रियोऽस्य। (*gomān priyo'sya*) 'Someone who has many cattle is dear to this person.'

a. गोमत-स् प्रिय-स् इदम्-अस् (*gomat-s priya-s idam-as*)

(132b) is derived from the abstract string (132a) through operations that apply for constituents padas: *gomat-s* > *gomat* > *gomāt* > *gomānt* > *gomān* (see 469); *priya-s* > *priya-R* (A 8.2.66 [551]); *idam-as* > *idaa-as* (A 7.2.102 [476]) > *ida-as* (A 6.1.97 [531]) > *ida-sya* (A 7.1.12 [492]) > *asya* (A 7.2.113 [477]); *priya-R asya* > *priya-u asya* (A 6.1.113 [525]) > *priyo asya* (A 6.1.87 [528]) > *priyosya* (A 6.1.109 [533]). In

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addition, the padas *gomat-s* and *priya-s* of (132a) can be combined, optionally, to form a bahuvrīhi compound (A 2.2.24 [317]). The item *gomat-s-priya-s* thus gotten is a derived nominal base, so that the endings included in it are subject to deletion (A 2.4.71, see 301).

Now, suppose there were possible competition between internally and externally conditioned operations in a structure (((*gomat*)-*s*) (*priya*)-*s*). Deleting *su* by A 6.1.68 (404) would then take precedence over deletion of the ending according to A 2.4.71, since it is internally conditioned: This depends merely on *su* following a consonant within the single pada *gomat-s*, but dropping *su* by A 2.4.71 depends on its occurring within a compound, which consists of two padas. If this decision procedure were allowed, however, one would wrongly derive **gomānpriya* instead of *gomatpriya*. The fact is that the bracketing shown does not come into play. Once a compound is formed, one has a new structure, a derived nominal base (*gomat-s-priya-s*), subject to special rules that apply to such derivates. Hence it is that Pāṇini formulates A 7.2.98 (478) to have *tva* and *ma* replace *yuṣm* and *asm* instead of letting A 7.2.97 provide for this replacement in *yuṣmad-*, *asmad-* followed by an ending and then specifying that *-d* of these pronouns is not replaced by *-a* in a derivate such as a compound. For once a derived nominal base such as *yuṣmad-as-putra-s* has been formed, only A 2.4.71 applies to delete the endings included in the compound. The zero replacement for the ending that follows *yuṣmad-* is specifically denoted by *luk*, so that, by A 1.1.63 (103), an operation which this ending would condition on its stem does not apply once the ending has been dropped. Similarly, once the ending of *gomat-s* has been deleted in the compound *gomat-s-priya-s*, the stem *gomat-* is not subject to having its penultimate vowel replaced by *ā* and does not receive the augment *num*.

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3.3. Nitya and anitya operations.

649 The ending *atus* in *kṛ-atus, pā-atus* ultimately derives from *liṭ* (A 3.4.82 [397]), so that it conditions doubling of a verb syllable (A 6.1.8 [382]). In addition, this ending is marked with *k* (A 1.2.5 [514]). Accordingly, other operations come under consideration: *-r* substitutes for the *-ṛ* of *kṛ* (A 6.1.77 [125]); the *-ā* of *pā* is deleted (A 6.4.64 [451]). None of the rules in question is an exception to the others, nor can bracketing possibly decide which operation takes precedence. Now, if doubling applies first, the other rules can still apply. For *kṛ-kṛ-atus* still has *ṛ* before a vowel, and the *-ā* of *pā-pā-* is still the final sound of the stem relative to *atus*. On the other hand, if semivowel replacement applies to give *kr-atus* and the *-ā* of *pā* is dropped, leaving *p-atus*, doubling is not possible in terms of A 6.1.1 (24), since there is now no element with a single vowel (*ekāc*), no syllable, to be iterated. The nitya operations do indeed take precedence. In order to allow doubling still to take place, then, Pāṇini has to make a special provision, in A 1.1.59 (101).

650 In certain instances, having a nitya operation take precedence over one that is anitya amounts to providing that affixes which condition sound replacements are introduced before such replacement can take effect. For example, at the stage of derivation where *tud* is followed by *tip*, two possible operations could apply: By A 3.1.77 [157]), *śa* is introduced after the verb; or, according to A 7.3.86 (127), the *-u-* of *tud* is replaced by the guṇa vowel *o*. If guṇa substitution took effect, *śa* would still introduced, since a base of the set beginning with *tud* is still followed by a sārvadhātuka affix denoting an agent: As *tu* has the status of *ti* (A 3.4.86 [398]) by A 1.1.56 (100), so does *tod* have the status of *tud*. But if *śa* is introduced first, guṇa substitution cannot apply in *tud-a-ti*. *śa* is marked with *ñ* (A 1.2.4 [513]), so that, according to A 1.1.5 (98), it cannot condition this substitution for its stem by A 7.3.86; nor is it possible that guṇa replacement by this rule

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apply to the complex stem *tud-a-* preceding *tip,* since the penultimate sound of the stem does not meet the conditions required (A 1.1.3 [97]). The nitya operation takes precedence, so that the required form *tudati* is derived.

651 In other instances, the principle under consideration serves to let an augment be added before a sound replacement applies. For example, given *tan-u-va,* with the ending *va* derived from *loṭ* (A 3.4.85 [398]), two operations come under consideration: *va* receives the initial augment *āṭ* (A 3.4.92); *-u-* is optionally deleted (A 6.4.107 [455]). Whether *-u-* is dropped or not, the ending can receive the augment, since this depends only on its deriving from *loṭ,* but once augmenting applies to give *-āva,* A 6.4.107 cannot apply to delete *-u-*, which now does not occur immediately before *v.* Consequently, augmenting takes precedence: *tan-u-va* > *tan-u-āva* > *tan-o-āva* (A 7.3.84 [127]) > *tanavāva* (A 6.1.78 [524]).

652 That a nitya operation takes precedence over one which is anitya of course does not mean that the introduction of affixes and augments necessarily precedes any and all sound replacements. For example, in the derivation of *teṣām* 'of those' from *tad-ām,* sound replacement precedes the introduction of the initial augment *suṭ*: *tad-ām* > *taa-ām* (A 7.2.102 [476]) > *ta-ām* (A 6.1.97 [531]) > *ta-sām* (A 7.1.52 [498]) > *te-sām* (A 7.3.103 [482]) > *teṣām* (A 8.3.59 [563]).

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3.4. Suspension of rules and their effects.

653 Letting a rule (*śāstra*) R_1 be suspended (*asiddha*) with respect to another rule R_2 can have two effects: (a) Although R_1 may have to apply before R_2, the latter does not apply to the results thus obtained, even if the conditions be met for it to take effect. (b) A general principle may dictate that R_1 take precedence over R_2, but the rule-suspension results in letting R_2 apply first. As far as type (a) is concerned, suspending the result (*kārya* 'what is to be done, brought about') of applying R_1 has the same effect as suspending a rule. On the other hand, (b) does not hold under this type of suspension. Instead, R_1 does indeed take precedence, but the effect of this is then treated as though it had not come about (*asiddhavat*), although it is allowed to stand.

654 A 6.1.86 (110) provides that a rule whereby a single sound replaces two sounds is suspended with respect to a rule which substitutes *ṣ* for *s* and one which introduces the augment *tuk*. For example, *ko* in

(133) कोऽसिञ्चत् (*ko'siñcat*) 'Who did the irrigating?'

derives from *ka-s*: *ka-s* > *ka-R* (A 8.2.66 [551]); *ka-R asiñcat* > *ka-u asiñcat* (A 6.1.113 [525]) > *ko asiñcat* (A 6.1.87 [528]) > *kosiñcat* (A 6.1.109 [533]). By A 6.1.85 (110), *o* which replaces *-o* and *a-* is treated as both the final of the first pada and the initial of the second pada. Consequently, *-s-* of *kosiñcat* is subject to replacement by *-ṣ-* (A 8.3.59 [563]). Since A 6.1.109 is suspended with respect to A 8.3.59, however, the latter cannot apply to *-s-* which follows the vowel gotten by applying the former, so that (133) is derived.

The compound (*adhi-tvā*) (A 2.2.18 [315]) is a derived nominal base subject to operations that apply specifically in compounds, superseding anything dictated by ordinary bracketing (see 648). In particular, the suffix *ktvā* of the compound is

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replaced by *Iyap* (A 7.1.37 [491]): *adhi-iya*. Now, replacing the contiguous vowels *-i-i-* with a single vowel *-ī-* (A 6.1.101 [532]) is a nitya operation relative to adding the augment *tuk* to the short vowel that precedes *Iyap* (A 6.1.71 [394]): Whether or not the augment is introduced, one still has the vowels *-i-i-* subject to replacement, but if the long-vowel substitution takes effect first, one no longer has a short vowel subject to augmenting. By virtue of rule suspension as provided for in A 6.1.86, the augment *tuk* is added prior to the replacement of *-i-i-* by the single long vowel *-ī-*: *adhi-iya* › *adhi-itya* › *adhītya* 'after studying, learning'.

655 By A 8.2.1 (109), a rule of the tripādī is suspended with respect to any preceding rule, except as otherwise provided for (see 538). The following will serve to illustrate this as concerns sūtras of the tripādī in relation to rules of the preceding seven and one-quarter chapters and sūtras of the tripādī in relation to preceding rules of the same section.

The *-ai* of *asmai* 'to this one' is replaced by *-āy* before a vowel (A 6.1.78 [524]). If pada-final *-y* is then deleted (A 8.3.19 [558]), the *-ā* of *asmā* and the initial vowels of padas such *ud* and *ā* in *ud dhara* (2sg.imper.) 'take up', *ā hara* 'bring' are not subject to replacements that generally apply to contiguous vowels: One has *asmā ud* ... and *asmā ā* ..., not **asmod* ... and **asmā* ... (A 6.1.87, 101 [528, 532]). To account for this, A 8.3.19 is suspended with respect to preceding rules such as A 6.1.87, 101, so that it cannot serve to provide elements subject to the operations stated in these rules.

Since A 8.4.68 (584) is suspended with respect to every other sūtra of the Aṣṭādhyāyī, it serves only to reinstate a close vowel *a*.

The *-n-* of *-anti*, as in *kurv-anti*, is replaced by *-ṁ-* according to A 8.3.24 (559). A 8.4.1-2 (570) are suspended in respect of A 8.3.24, so that only the latter rule applies, and *-n-* is not replaced by *-ṇ-*. By A 8.4.58 (580), *-n-* then replaces *-ṁ-* before *-t-*; and, in accordance with A 8.2.1, this *-n-* is not subject to retroflexion by A 8.4.2.

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The dative singular form *amuṣmai* 'that one' is derived as follows: *adas-e* > *adaa-e* (A 7.2.102 [476]) > *ada-e* (A 6.1.97 [531]) > *ada-smai* (A 7.1.14 [492]) > *amu-smai* (A 8.2.80 [553]) > *amuṣmai* (A 8.3.59 [563]). At the stage *adaa-e*, two operations come under consideration: substituting the second vowel for the two vowels *-a-a-* and replacing the ending *ṅe* with *smai*. The former takes precedence, since it is internally conditioned. A 8.2.80 is suspended relative to both A 6.1.97 and A 7.1.14, so that it cannot be considered for possible application at this stage of derivation. If A 8.2.80 were allowed to interact with A 7.1.14, a wrong form would be allowed. Whether or not *smai* replaces *ṅe* after *ada-*, A 8.2.80 could take effect, since the only condition for this is that the pronoun not end with *s*, but A 7.1.14 could not apply to *amu-e*. The nitya operation would take precedence over the anitya operation, with undesirable results.

In the derivation of the participle *pakva* from *pac-ta*, first A 8.2.30 (544) applies to replace *-c* with *-k*, then A 8.2.52 (549) applies to let *v* replace the *t* of the suffix.

656 The forms *rājabhyām* (instr.-dat.-abl. du.), *rājabhis* (instr. pl.), *rājabhyas* (dat.-abl. pl.), *rājasu* (loc. pl.) are derived from a base *rājan*. This is classed as a pada (A 1.4.17 [75]) when the endings in question follow, in order to account for the deletion of *-n* (A 8.2.7 [539]). Similarly, *rājan-* followed by the affix *kyac* (A 3.1.8 [283]) is classed as a pada (A 1.4.15), so that the *-n* of the base is deleted: *rājan-ya* > *rāja-ya* > *rājīya* (A 7.4.33 [485]) 'wish a king for oneself' (3sg. pres. *rājīyati*). Now, since the *-a* of *rāja-* is not replaced by *-ā* before *bhyām* or by *-e* before *bhyas* and *sup*, the sūtra that serves to delete *-n* is suspended with respect to the rules that provide for these replacements (A 7.3.102-103 [482]), as also with respect to the rule whereby *ais* replaces *bhis* after a stem in *-a* (A 7.1.9 [492]). On the other hand, the *-a* of *rāja-* is subject to replacement by *-ī* before *kyac*, so that A 8.2.7 cannot be suspended with respect to every rule that precedes. A 8.2.2 (538) therefore specifies the rules relative to which A

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8.2.7 is suspended. By virtue of its suspension in respect of A 7.1.9 and A 7.3.102-103, A 8.2.7 does not supply elements subject to the operations provided for in these sūtras. Similarly, once A 8.2.7 has applied to delete the *-n* of *brahman-* in *brahmhan-bhyām,* although the stem is formed with a suffix ***kvip*** (A 3.2.87 [295]), the augment ***tuk*** is not added to *-a-* by A 6.1.71 (394): *brahmahabhyām.*

Consider now *pañcabhis, pañca,* and recall that ancillary rules take their place with rules they serve to interpret (see 629). Deleting *-n* in *pañcan-bhis* by A 8.2.7 is a nitya operation relative to the accentuation provided for in A 6.1.180 (597). If the latter were to apply first, the deletion of *-n* would still apply, but if *-n* is dropped first, A 6.1.180 cannot apply. The rule concerns padas with items called ***ṣaṣ***. The saṁjñāsūtra A 1.1.24 (60) is brought in to interpret this class name, but *pañca-bhis* does not contain a term that ends with *-n.* Similarly, deleting *-n* by A 8.2.7 is nitya with respect to disallowing feminine affixes according to A 4.1.10 (271). Letting A 8.2.7 be suspended relative to these sūtras lets them apply first, so that the penultimate vowel of *pañcan-bhis* is given high pitch and feminine suffixes are disallowed after *pañcan.* Moreover, once the *-n* of *pañcan-* has been dropped, since A 8.2.7 is suspended relative to A 4.1.4, the feminine affix ***ṭāp*** is not added to *pañca* in the feminine.

657 As shown in 655, the derivation of forms such as *amuṣmai* requires that A 8.2.80 be suspended with respect to earlier rules. This suspension can nevertheless not be absolute. Consider how the instrumental singular *amunā* is derived: *adas-ā* > *adaa-ā* > *ada-ā* > *amu-ā* > *amunā* (A 7.3.120 [497]). If A 8.2.80 were suspended relative to A 7.3.120, one could not have the ending replaced by *nā.* Hence, A 8.2.3 (538) disallows the suspension that would otherwise hold by A 8.2.1.

658 If nothing else were taken into consideration, one might consider that A 8.2.32 is suspended with respect to A 8.2.31 (544), since the rules are governed by A 8.2.1. Of course, this would mean that A 8.2.32 would be vacuous: By virtue of rule

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suspension, A 8.2.31 would apply everywhere that A 8..2.32 could possibly apply. This is because A 8.2.32 is an exception to the preceding sūtra. Obviously, then, it should take precedence over the general rule. In effect, rule-suspension does not apply in such instances. Instead, blocks of related general rules with their exceptions are suspended with respect to preceding rules.

659 The facts to be accounted for through rule-suspension according to A 6.1.86, 8.2.1-3 are such that Pāṇini can specify the sūtras with respect to which others are suspended (see 654-657). There are other cases, where this is not easily done. Consider again some examples of rules headed by A 6.4.22 (111).

A 6.4.36 (447) lets *ja*-replace *han*-before *hi*. This should account for *jahi*. However, the stem *ja*-ends with *-a*, so that one has also to keep A 6.4.105 (455) from applying to delete the ending *hi*. This could be done by letting A 6.4.36 be suspended with respect to A 6.4.105.

A 6.4.37 (448) serves to delete the *-m* of *gam*-before an affix such as *kta*: *gam-ta* > *gata*. A 6.4.48 (450) should not apply to delete the *-a* of *ga*-in *gata*-. Again, one could let one rule, A 6.4.37, be suspended with respect to another, A 6.4.48.

Given *śās-hi*, two sūtras come into play: A 6.4.35 (447), whereby *śā* replaces *śās* before *hi*, and A 6.4.101 (455), which serves to replace *hi* with *dhi* after certain consonants, including *s*. Clearly, each operation eliminates a conditioning context needed for the other to take effect: If *śā* replaces *śās*, giving *śā-hi*, the ending no longer follows a consonant, and if *dhi* substitutes for *hi* in *śās-hi*, the verb is no longer followed by *hi*. Once A 1.1.56 (100) is taken into consideration, however, the replacement of *śās* by *śā* is a nitya operation relative to substituting *dhi* for *hi*. The substitute *dhi* is given the status of its substituend *hi*, so that *śās* can be replaced by *śa* even if *dhi* replaces *hi* first. But once *śā* replaces *śās*, the substitution of *dhi* for *hi* cannot take effect, since this operation depends on a sound, so that A 1.1.56 does not give *śā* the status of *śās* with respect to it. Consequently, replacing

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śās with *śā* takes precedence. To account for *śādhi,* then, one could let A 6.4.35 be suspended relative to A 6.4.101, so that the latter applies first.

The imperative *edhi* also contains *dhi,* which should replace *hi* according to A 6.4.101. Two other sūtras are involved in deriving *edhi,* A 6.4.119 and A 6.4.111 (456-457). The relation between A 6.4.101 and A 6.4.119 is crucial. Again, one operation is nitya, the other anitya: if *e* replaces the *-s* of *as-* before *hi,* then the ending is no longer eligible for being replaced by *dhi,* but even if *dhi* first substitutes for *hi,* the *-s* of *as-* is still eligible for replacement by *e.* In order to ensure the proper results, then, one could once more have rule suspension: A 6.4.119 is suspended relative to A 6.4.101.

Given *i-ant* (see 647), two operations come under consideration: semivowel replacement by A 6.4.81 or augmenting with *āṭ* by A 6.4.72. The former is a nitya operation, hence would take precedence. To ensure that the augment is added to the stem, then, one could have A 6.4.81 be suspended with respect to A 6.4.72, which would then apply first.

A similar situation holds for A 6.4.111 and A 6.4.72, which apply in deriving *āsan* 'they were'. To assure that the augment *āṭ* is added, A 6.4.111 could be suspended relative to A 6.4.72, which would then apply first.

660 There are obvious differences between the examples of rule-suspension discussed earlier and the examples I have taken up in 659. In particular, it is not possible to take care of all the instances dealt with in 659 by rules arranged in sections under a single heading *pūrvatrāsiddham* or *uttaratrāsiddham.* For, as shown, some rules would have to be suspended with respect to following ones (*uttaratra*), others with respect to preceding sūtras. Nor is it reasonable to insist that all the rules in question be assigned to one of two sections, under the possible headings noted. For this would upset a more important organization, according to operands and the contexts for operations. It is not surprising, then, that Pāṇini indeed does not state these rules in a section under a

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heading stating that anything is absolutely suspended (*asiddha*). A 6.4.22 provides that something is treated as though it had not come about (*asiddhavat*). That is, operations are allowed to take place as dictated by general principles, then a result obtained is treated as though it had not taken effect. For example, *śās* is indeed replaced by *śā* before *hi*, but *śā-* in *śā-hi* is now treated as though this substitution had not taken place, so that *hi* can be replaced by *dhi*. As can be seen, A 6.4.22 is thus comparable to an extension rule like A 1.1.56 (100).

Remark.

661 I differ from Pāṇinīyas in my interpratation of A 6.4.22. Pāṇinīyas maintain that this too should be considered to provide for rule suspension (*śāstrāsiddhatvam*), not the suspension of what results from applying rules (*kāryāsiddhatvam*). Full arguments for my interpretation are given in part II of my work, where I also discuss the reasons Pāṇinīyas give for their interpretation.

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3.5. Application of rules in the order they are stated.

662 There are two groups of rules which necessarily apply in the order they are stated: sūtras of the tripādī and some of those in the section headed by A 1.4.1, where A 1.4.2 applies (109-110). Obviously, if a rule of the tripādī is said to be suspended with respect to any preceding rule, any sūtra of this section applies before any subsequent rule. The rules in question are those that provide for final phonological adjustments. Rules of the section headed by A 1.4.1 are extrinsically ordered for different reasons. There are cases where two sūtras have to apply, thus coming into conflict. The conflict is resolved in favor of the rule stated later, according to A 1.4.2.

663 The situation spoken of in

(134) देवदत्तो वृक्षमसिना छिनत्ति। (*devadatto vṛkṣam asinā chinatti*) 'Devadatta is cutting a tree with an axe.'

involves three participants in the act of cutting, Devadatta, a tree (*vṛkṣa*), and an axe (*asi* 'sword, axe'). These are respectively classed as kartṛ, karman, and karaṇa by A 1.4.54, 49, 42 (214). The L-affix *laṭ*, replaced by *tip*, is introduced to signify a kartṛ (A 3.4.69, 77-78 [232]); nominal endings of the second and third triplets are introduced to signify a karman and a karaṇa (A 2.3.2, 18 [240]). One must also account for

(135) असिः साधु छिनत्ति। (*asiḥ sādhu chinatti*) 'The axe cuts well.'

in which an axe is spoken of as kartṛ. In accordance with usage like (135), one may maintain that people do indeed speak of an axe as an independent (*svatantraḥ*) participant in cutting, eligible for classification as kartṛ. The fact remains, nevertheless, that an axe must be wielded as an instrument of cutting if it is to play any role in this activity. That is, for an axe to be classed as kartṛ, it must be eligible simultaneously to be classed as karaṇa. The classificatory rules A 1.4.42 and

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A 1.4.54 come into conflict in this situation. Nor is it permissible to have the participant in question be classed both as karaṇa and karman. By A 1.4.1 only one class name may apply. In accordance with A 1.4.2, the class name provided by the later rule A 1.4.54 alone applies. For such reasons, the sūtras that provide for assigning particular class names to kārakas have to be stated in a particular order.

664 In the derivation of sentences such as

(136) a. त्वङ्गच्छसि। (*tvaṅ gacchasi*) 'You are going.'

b. अहङ्गच्छामि। (*ahaṅ gacchāmi*) 'I am going.'

only A 1.4.105 or A 1.4.107 (234) can apply, to select a verb ending of the madhyama or the uttama set, since each sentence meets the conditions for one of these rules alone. On the other hand, the conditions for both these rules are met in

(137) त्वञ्चाहञ्च गच्छावः। (*tvañ cāhañ ca gacchāvaḥ*)

'You and I are going.'

Only an ending of the uttama set is allowed, however: *gacchāvaḥ* cannot alternate with *gacchathaḥ* (2du.) in (137). This is taken care of by stating A 1.4.105, 107 in the section where A 1.4.2 is in force: in such cases, where two conflicting rules come into play, that one applies which is stated later.

Remark.

665 Pāṇinīyas treat A 1.4.2 as a general metarule that is applicable anywhere in the Aṣṭādhyāyī. They also accept, however, that in some cases of conflict an operation provided by an earlier rule takes precedence over one provided for in a later rule. I consider these issues more fully in parts II and III.1 of my work.

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4. THE BACKGROUND OF PĀṆINI'S SYSTEM

4.0. Introduction.

666 Pāṇini's derivational system presupposes the analysis of utterances into components: padas, stems, bases, affixes, and augments. Strings of the types (11)-(12) (212) must contain individual elements such that relations which hold among components and their meanings are overtly shown, so that Pāṇini has to posit basic forms of bases and affixes. These are then subject to various operations in the course of deriving final utterances. Pāṇini merely operates with such basic units. We do not have evidence in his own words concerning how he proceeded in abstracting units from larger items or the precise criteria for deciding that a particular variant should be treated as basic. Nevertheless, Pāṇinīyas from Kātyāyana on describe certain procedures which are perfectly compatible with Pāṇini's statements, so that we may accept that Pāṇini too operated with such generally accepted procedures. Indeed, given that Pāṇini definitely knows Śākalya's analyzed text (*padapāṭha*) for the Ṛgveda (cf. A 1.1.16 [76]), we may reasonably conclude that he inherited from his predecessors not only such procedures but also some analyses, which he adapted to his own grammar (see 709). In this section, I shall consider the general procedures used in analysis and the criteria for positing basic forms in Pāṇini's system. The arguments I present are compatible with this system, although, for reasons given already, I cannot claim to be summarizing any precise chain of reasoning Pāṇini followed.

4.1. Analysis leading to the extraction of elements.

4.1.1. Analysis: reasoning from anvaya and vyatireka.

667 Consider the sentences

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(138) **गामानय।** (*gām ā naya*) 'Bring the cow.'

(139) **अश्वमानय।** (*aśvam ā naya*) 'Bring the horse.'

(140) **गाम्बधान।** (*gām badhāna*) 'Tie up the cow.'

(141) **अश्वम्बधान।** (*aśvam badhāna*) 'Tie up the horse.'

(138) and (139) have the sequence *ā naya* and the meaning 'bring' in common; (140) and (141) share the element *badhāna* and the meaning 'tie up'; the item *gām* and the meaning 'cow' are common to (138), (140); (139) and (141) have in common the term *aśvam* and the meaning 'horse'. This is a group of sentences in which certain elements can be be considered to remain constant while others are changed. One can say that, starting with (138), one gets (139) by removing *gām* and inserting *aśvam* in its place, (140) by substituting *badhāna* for *ā naya*. Similarly, (141) is gotten by removing *gām* of (140) and inserting *aśvam* in its place. In brief, by keeping a certain context constant while letting different elements occur in this context, one can attribute meaning differences in utterances to these distinct elements. Using this procedure, partial sentential meanings are attributed to given elements abstracted from sentences.

In general, on condition that

(I) B occurs consequent on the occurrence of A.

and

(II) If A is absent, B does not occur.

both obtain, one concludes that A is the cause of B. In particular, if a meaning (*artha*) A is understood when a given linguistic element (*śabda*) or one of a set of elements Ś is used and not understood when such a linguistic item is not used, then one can conclude that Ś is associated with the meaning A as the cause of its being understood through verbal communication. This is the reasoning by concurrent presence (*anvaya* 'continued occurrence') and absence (*vyatireka*), whereby utterance such as (138)-(141) can be analyzed into constituents to which are attributed given meanings.

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668 The same procedure allows analyzing words of utterances into components. For example, consider those parts of the following sentences that are shown in Italicized Devanāgarī and bold face Italic:

(142) ***आस्ते*** भूमौ। (***āste*** *bhūmau*) 'He (she) is seated on the ground'.

(143) ***आसाते*** भूमौ। (***āsāte*** *bhūmau*) 'They two are seated on the ground.'

(144) ***आसते*** भूमौ। (***āsate*** *bhūmau*) 'They all are seated on the ground.'

(145) ***भूमौ*** शेते। (*bhūmau* ***śete***) 'He (she) is lying on the ground.'

(146) ***भिषजम्*** अपश्यत्। (***bhiṣajam*** *apaśyat*) '... saw a doctor.'

(147) ***अपश्यद्*** भिषजौ। (*apaśyad* ***bhiṣajau***) '... saw two doctors.'

(148) ***अपश्यद्*** भिषजः। (*apaśyad* ***bhiṣajaḥ***) '... saw several doctors.'

(149) ***ऋत्विजम्*** अपश्यत्। (***ṛtvijam*** *apaśyat*) '... saw a priest.'

(150) अपश्यद् ***ऋत्विजौ*** (*apaśyad* ***ṛtvijau***) '... saw two priests'

(151) अपश्यद् ***ऋत्विजः।*** (*apśyad* ***ṛtvijaḥ***) '... saw several priests.'

In the manner described, (142)-(145) are analyzed as containing the item *bhūmau* meaning 'on the ground'. In addition, (142)-(144) share the element *ās* in *āste, āsāte, āsate*; contrast *śete* in (145), where *te* occurs with *śe*. From such sets, one can posit an item *ās* meaning 'be seated' and endings *te, āte, ate,* associated respectively with singularity, duality, and plurality. Similarly, (146)-(151) allow one to

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abstract *bhiṣaj* 'doctor' and *ṛtvij* 'priest', as well as endings *am, au, aḥ,* also connected respectively with singularity, duality, and plurality. Moreover, from sentences such as

(152) ऋत्विजा यज्ञोऽनुष्ठीयते। (*ṛtvijā yajño'nuṣṭhīyate*) 'A sacrificial rite is being carried out by a priest.'

(153) ऋत्विग्भ्यां यज्ञो ऽनुष्ठीयते। (*ṛtvigbhyāṁ yajño' nuṣṭhīyate*) 'A sacrificial rite is being carried out by two priests.'

(154) यज्ञोऽनुष्ठीयत ऋत्विग्भिः। (*yajño'nuṣṭhīyata ṛtvigbhiḥ*) 'A sacrificial rite is being carried out by several priests.'

other elements can be extracted that are also associated with these numbers: *ā, bhyām, bhiḥ.* In addition, from (149)-(154) it is possible to conclude that items of the group *am au aḥ* are linked in common with the sense of objectivity, those of the set *ā bhyām bhiḥ* with agency. Similarly, given

(155) a. *āste* b. *āsse* 'you are seated' c. *āse* 'I am seated'

one can recognize a set of endings *te se e,* also connected with singularity and agency.

By inserting and removing certain elements in given contexts and reasoning from anvaya and vyatireka, one can thus analyze utterances into constitutents, including bases and affixes, to which are assigned partial meanings of utterances.

Remark.

669 For fairly detailed discussions and extensive textual references concerning the procedure of removing (*udvāpa, uddhāra, apoddhāra*) and inserting (*āvāpa, prakṣepa*) items in contexts and reasoning by anvaya and vyatireka as shown above, not only in grammar but also in other spheres of Indian thinking, see 'Anvaya and vyatireka in Indian grammar', *Adyar Library Bulletin* 31-32 (1967-1968 [= V. Raghavan Felicitation Volume]): 313-352, 'On reasoning from anvaya and vyatireka in

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early Advaita', *Studies in Indian philosophy* [*A memorial volume in honour of Pandit Sukhlalji Sanghvi*], edited by Dalsukh Malvania and Nagin J. Shah (Ahmedabad: L.D. Institute of Indology, 1981), pp. 79-104, and *Linguistic analysis and some Indian traditions* (The Pandit Shripad Sastri Devdhar Memorial Lectures, first series [Pune: Bhandarkar Oriental Research Institute, 1983]), pp. 37-116.

4.1.2. Positing zero replacements.

670 The analytic procedure outlined in Section 4.1.1 requires that two conditions be met in order to attribute a meaning A to an element or set of elements Ś:

(I) If Ś occurs, meaning A is then understood.

(II) If Ś is absent, meaning A is not understood.

There is deviation (*vyabhicāra*) if either of the following holds:

(I') If Ś occurs, meaning A is not understood.

(II') In the absence of Ś, meaning A is understood.

Any such deviation precludes attributing a given meaning to a particular linguistic element through reasoning from anvyaya and vyatireka. Consider now the sentences

(156) **पयस् तत्र तिष्ठति।** (***payas*** *tatra tiṣṭhati*) 'The water is standing there.'

(157) **पयस् ताडयति।** (***payas*** *tāḍayati*) '... is striking the water.'

(158) **पयसा पुष्पाणि सिञ्चति।** (***payasā*** *puṣpāṇi siñcati*) '... is sprinkling the flowers with water.'

It is possible to abstract a base *payas*, followed in (158) by the ending *ā*. Now, in (149) (668), *ṛtvij* occurs with *am*, an ending to which one can attribute the meanings objectivity or object and singularity, reasoning from anvaya and vyatireka: *ṛtvijam* in (149) refers to a priest as an object of seeing. In (157), *payas* refers to water as an object of striking. Nevertheless,

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once the base *payas* has been abstracted, there remains no additional element here to which an additional meaning could be attributed. The base alone appears in (156) and (157). Similarly, although

(159) रामो रावणं *हन्ति*। (*rāmo rāvaṇaṁ* ***hanti***) 'Rāma is killing Rāvaṇa.'

can be analyzed as containing *han-ti* made up of the base *han* 'kill' and an ending *ti*, to which it is possible to attribute the meanings agency and singularity, there are other instances, where no such affix occurs. For example,

(160) रामो रावणम् *अहन्*। (*rāmo rāvaṇam* ***ahan***) 'Rāma killed Rāvaṇa.'

contains *ahan*, which is comparable to *apaśyat, apaśyad* of (146)-(151) in that both forms denote actions referred to the past and performed by one agent, just as *apśyam* 'I saw' and *ahanam* 'I killed' are comparable. But *ahan* lacks an overt ending.

671. There are thus two general sorts of elements. Some, such as *bhiṣajam, bhiṣajau, bhiṣajaḥ, āste, apaśyat, apaśyad,* and *hanti*, admit of straightforward analysis, so that, by reasoning from anvaya and vyatireka, it is possible to abstract affixes to which are attributed certain meanings. Other items, such as *payas, ahan,* lack overt affixes, although they are otherwise comparable to the former type. It is also the case that *payas, payaḥ, payo* in (156)-(157) (670) and

(161) तत्र तिष्ठति *पयः*। (*tatra tiṣṭhati* ***payaḥ***)

(162) ताडयति *पयः*। (*tāḍayati* ***payaḥ***)

(163) *पयो*ऽत्र तिष्ठति। (***payo****'tra tiṣṭhati*) 'The water is standing here.'

are phonologically comparable to *bhiṣajas, bhiṣajaḥ, bhiṣajo* in (148) (668) and

(164) *भिषजस्* तत्र तिष्ठन्ति। (***bhiṣajas*** *tatra tiṣṭhanti*) 'The priests are remaining there.'

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(165) भिषजोऽत्र तिष्ठन्ति। (*bhiṣajo'tra tiṣṭhanti*) 'The priests are remaining here.'

That is, *payas, payaḥ, payo* exhibit the same kind of phonological variation in different contexts as is typical of complex elements like *bhiṣajas, bhiṣajaḥ, bhiṣajo*. If, then, the variants of these complex items are accounted for by classing the items as padas (A 1.4.14 [49]) and having particular operations apply to pada-final sounds (A 8.2.66, 8.3.15, 34 6.1.113 [551, 557, 561, 525]), it makes sense to have *payas, payaḥ, payo* also assigned to the pada class.

672 To be sure, one need not insist that every member of the pada class must terminate in an ending. After all, if *payobhiḥ* is derived from *payas-bhis*, one can say that *payas* followed by the endings *bhis* is a pada (A 1.4.17 [75]). Similarly, it would be possible to say that a form like *payas* belongs to the pada class without requiring endings. The same would be said of *dadhi* 'yogurt,curds' in

(166) दधि तिष्ठति तत्र। (*dadhi tiṣṭhati tatra*) 'The curds are standing there.'

(167) दधि पश्य। (*dadhi paśya*) 'Look at the curds.'

But taking this step has serious consequences concerning the analytic procedure in question. For this results in instances where there is deviation (*vyabhicāra*: 670), so that the abstraction of bases and affixes associated with certain meanings, through reasoning from anvaya and vyatireka, can no longer be maintained. There is a way of maintaining the integrity of the analysis and also accounting for the fact that *payas* and so on behave like padas. One can postulate in the grammar that *payas, payaḥ* and so on are padas, but that endings which elsewhere are overt simply are not explicitly used in them. That is, padas such as *payas, dadhi,* and *madhu* 'honey' have zero endings.

Note carefully, however, that the analytic procedure in question involves reasoning from anvaya and vyatireka.

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Consequently, one would now have to posit different zeroes for *payaḥ* in (161) and (162) (671), comparable respectively to *devadattaḥ* and *devadattam* in

(168) तत्र तिष्ठति देवदत्तः। (*tatra tiṣṭhati devadattaḥ*) 'Devadatta is remaining there.'

(169) देवदत्तम् अपश्यत्। (*devadattam apaśyat*) '... saw Devadatta.'

Now, were one to adopt a system in which there are morpheme-classes of allomorphs, including zero morphs, one could simply say that *payaḥ* of (161) contains a zero morph of the morpheme-class that includes *s* (nom. sg.) and that *payaḥ* of (162) contains a zero morph of the morpheme-class that includes *am* (acc. sg.), so that there are indeed separate zero morphs involved. In a derivational system like Pāṇini's, in which initial strings must contain bases with specific affixes, another procedure is preferable. Overt affixes are allowed to occur in initial strings, and they are subsequently replaced by zero: *payas-s* › *payas, payas-am* › *payas* (A 7.1.23 [495]).

The abstraction of bases and affixes and the assignment of particular meanings to them by reasoning from anvaya and vyatireka thus entails positing zero replacements for certain elements in Pāṇini's derivational system.

Remarks.

673 1. *agnicit* and *somasut* are derived with the kṛt suffix ***kvip***, which is deleted (A 3.2.90-91, 2.2.19, 6.1.67, 71 [295, 315, 409, 394]). Patañjali says the following concerning these: A meaning that pertains to a given linguistic unit is not understood without the use of the element that signifies that meaning. Yet we see that in the case of examples such as *agnicit, somasut* a meaning is understood without the use of an element to which this pertains. Hence, we consider that this is brought about by zero (deletion). [Bhāṣya I.241.1-4: न ह्यन्तरेण

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तद्वाचिनः शब्दस्य प्रयोगं तस्यार्थस्य गतिर्भवति। पश्यामश्च पुनरन्तरेणापि तद्वाचिनः शब्दस्य प्रयोगं तस्यार्थस्य गतिर्भवतीति अग्निचित् सोमसुद् इति यथा। ते मन्यामहे लोपकृतमेतद्येनान्तरेणापि तद्वाचिनः शब्दस्य प्रयोगं तस्यार्थस्य गतिर्भवतीति।] Patañjali speaks here of the use (*prayogam*) of a linguistic unit (*śabdasya*) which signifies a given meaning (*tadvācinaḥ*). In the particular instances used as illustrations, the meaning in question is agent (*kartṛ*), attributed to the kṛt affix *kvip* (A 3.4.67 [248]). Patañjali also speaks of it being brought about by zero, deletion (*lopakṛtam etat*) that a meaning is understood even without the use of the element supposed to signify that meaning. Since *lopa* denotes the absence of an element (A 1.1.60 [79]), commentators clarify what Patañjali means. Kaiyaṭa notes that the following is meant: That a meaning is understood in the absence of an element supposed to signify it is accounted for (*saṅgṛhītam* 'included') by means of zero (*lopadvāreṇa*). [Pr. II.141: लोपकृतमिति। लोपद्वारेणैतत् सङ्गृहीतमित्यर्थः।] That is, as Nāgeśa points out, it is known from experience in ordinary usage that the element which remains after another is replaced by zero in a grammatical derivation conveys the meaning attributed to the deleted item. [Ud. II.141: एवञ्च शिष्यमाणस्य लुप्यमानार्थबोधकत्वमनुभवसिद्धमिति भावः।]

674 2. That the mode of reasoning according to which the concurrent presence and absence of linguistic elements such as affixes and the comprehension of meanings said to be associated with these items can thus be maintained is nevertheless not a function of real usage but of what a grammarian posits in order to describe such usage, and Pāṇinīyas recognize this. The contrast between actual usage and what a grammarian posits to describe it is brought out neatly in the Paramalaghumañjūṣā during a discussion of what

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meanings pertain to nominal bases (*prātipadika*: A 1.2.45-46 [48]). Five meanings come into play: a generic property (*jāti*) that characterizes anything signified by a given base and thereby delimits a class of individuals; an individual (*vyakti*) qualified by such a property; a gender (*liṅga*, see 273); a number (*saṅkhyā*); and an individual as a participant in an action (*kāraka*, see 214). The view is proposed that a nominal base has a quintuplet (*pañcakaṃ*) of meanings, all five of the above, including a kāraka (*kārakam api*). This meets with an objection: By anvaya and vyatireka, the role that something plays with respect to an action is signified (*vācyam*) only by an affix (*pratyayasyaiva*). The objection is refuted by pointing out that the understanding of something's functioning as kartṛ and so on is known even in cases where there is no overt affix, as in sentences like (166)-(167) (672), where *dadhi* alone refers to curds as agents of being in a place and objects of seeing. Nor should one argue that this is understood because a hearer recalls an affix that has been deleted (*lupta-pratyayasmaraṇāt*), since even someone who is not a grammarian and thus does not know of such zeroing (*lopam ajānataḥ*) understands the meanings in question from the nominal alone (*nāmata eva tatpratīteḥ*). [PLM 392: **कारकमपि प्रातिपदिकार्थ इति पञ्चकम्प्रातिपदिकार्थः। नन्वन्वय-व्यतिरेकाभ्याम्प्रत्ययस्यैव तद्वाच्यमिति चेन्न। दधि तिष्ठति दधि पश्येत्यादौ कर्त्रादिकारकप्रतीतेः सिद्धत्वात्। न च लुप्त-प्रत्ययस्मरणात्तत्प्रतीतिरिति वाच्यम् प्रत्ययलोपमजानतोऽपि नामत एव तत्प्रतीतेः।** cf. LM 781]

675 3. Pāṇinīyas emphasize that the very analysis which entails positing zero replacements has its proper place only as a means for describing usage in a grammar. Thus, for example, VP 1.24 **(अपोद्धारपदार्था ये ये चार्थाः स्थितलक्षणाः। अन्वाख्येयाश्च ये श्ब्दा ये चापि प्रतिपादकाः॥)** distinguishes

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between meanings (*arthāḥ*) that have a fixed status (*sthitalakṣaṇāḥ*) and those that are gotten through abstraction (*apoddhārapadārthāḥ*). Two types of speech units (*śabdāḥ*) are associated with these. Units that are to be explained (*anvākhyeyāḥ*) are linked with the first type of meanings, and units that serve, in a grammar, to convey (*pratipādakāḥ*) the others are linked with the abstracted meanings. The Vṛtti on this verse says the following about meanings attributed to components extracted from wholes used in real communication. A meaning gotten through abstraction (*apoddhārapadārthaḥ*) is totally blended (*atyantasaṁsṛṣṭaḥ*) in a single total meaning from which it is abstracted and given a separate status in a form that is only inferable and posited (*anumeyena parikalpitena rūpeṇa*). For that partial meaning is beyond actual usage (*vyavahārātītam*), in which meanings of whole elements are understood. It is adopted as the significand of a given element extracted from a larger entity that is actually indivisible so far as usage is concerned, and this is done through reasoning from anvyaya and vyatireka, but only in order to make possible statements of grammatical operations (*kāryārtham*). [Vṛtti 65.1-6: **... अपोद्धारपदार्थो नामात्यन्तसंसृष्टः संसर्गादनुमेयेनपरिकल्पितेनरूपेणप्रकृतविवेकः सन्नपोद्धियते। प्रविविक्तस्य हि तस्य वस्तुनो व्यवहारातीतं रूपम्। ... तथैव चाप्रविभागे शब्दात्मनि कार्यार्थमन्वयव्यतिरेकाभ्यां रूपसमनुगमकल्पनया समुदायादपोद्धृतानां शब्दानामभिधेयत्वेनाश्रीयते।**]

676 4. Of course, if a grammarian is to describe Sanskrit or any language of a comparable structure in a generalized manner, he must abstract words as components of utterances and accept an analysis of words into constituent bases, affixes, and augments. This does not mean, however, the grammarian must also accept that all these components as he posits them are to be granted real status in actual

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communication. As Bhartṛhari puts it, the division of elements with which grammar operates is a postulated (*kalpitaḥ*) distinction among bases, affixes, and so on, intended to convey something else (*parapratipādanāya*), namely whole elements used in communication. [Vṛtti on VP 1.171 (222.1): **विभागो नाम परप्रतिपादनाय कल्पितः प्रकृतिप्रत्ययादिभेदः।**] In a similar vein, Nāgeśa notes the following. It is impossible to grasp a relation (*saṅketa* 'convention, conventional relation') between every possible sentence and its meaning, and one cannot explain each and every sentence independently by any brief means. Hence, teachers of old, by the artifice (*kalpanayā*) of treating sentences as though they were really composed of divisible elements, separated out words. Further, by positing bases and affixes as distinct entities in a word and reasoning from anvaya and vyatireka --- which are themselves only assumed in view of items such as *dadhi* in utterances like (166)-(167) --- they posited different meaning segments associated with these. But this division of meanings has as its proper domain only a grammar. [LM 5-6: **तत्र प्रतिवाक्ये सङ्केतग्रहासम्भवात्तत्तदन्वाख्यानस्य लघूपायेनाशक्यत्वाच्च कल्पनया पदानि प्रविभज्य पदे प्रकृतिप्रत्ययभागकल्पनेन कल्पिताभ्यामन्वयव्यतिरेकाभ्यां तत्तदर्थविभागं शास्त्रमात्रविषयम्परिकल्पयन्तिस्माचार्याः**]

4.1.3. Signifiers, cosignifiers, and affixes with no meaning.

677 Let us now consider again two verb forms, *pacati* and *hanti*. These share the element *ti*. Moreover, *hanti* is immediately divisible into two components: the base *han* 'strike, kill' and the ending *ti*. In the manner described in Section 4.1.1, it is possible to attribute the meanings agency

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and singularity to this ending. The form *pacati* also signifies an action, cooking, being performed by a single agent. Nevertheless, it is not immediately evident that this should be divided into two constituents. Once a base *pac* 'cook, bake' is abstracted, the question arises whether *-ati* which follows this should be treated as a single element or as two. In connection with this, consider also the forms *puṣyati* 'thrives', *sunoti* 'presses juice out of something', *tudati* 'goads, shoves, wounds'. These are comparable in that each signifies an action being performed by a single agent. Let us, therefore, agree to abstract an affix *ti* common to these forms, which are then tripartite: *pac-a-ti, puṣ-ya-ti, su-no-ti* and *tud-a-ti* (see A 3.1.68, 69, 73, 77 [157]).

678 Another question now comes up: Should the elements which occur between the bases *pac, puṣ, su, tud* and the ending *ti* be treated as signifying part of the meanings of the forms in question? Two meanings are to be considered: singularity and agency. Now there are triplets such as

(170) a. *pacati* '... is cooking' b. *pacasi* 'you are cooking' c. *pacāmi* 'I am cooking'

(171) a. *pacataḥ* 'they two are cooking' b. *pacathaḥ* 'you two are cooking' c. *pacāvaḥ* 'we two are cooking'

(172) a. *pacanti* 'they are cooking' b. *pacatha* 'you all are cooking' c. *pacāmaḥ* 'we are cooking'

It is possible, by reasoning from anvaya and vyatireka (667) to attribute singularity, duality, and plurality, respectively, to the sets *ti si mi, taḥ thaḥ vaḥ, anti* (see A 7.1.3 [509]) *tha maḥ*. It is not possible to say that *-a-* or *-ā-* in the forms of (170)-(172) is associated exclusively with any one number property. This leaves the alternative of attributing to *-a- -ā-* of *pacati* and so on the meaning agency. If this step is taken, one should also attribute this meaning to *-ya-, -no-, -a-* in *puṣ-ya-ti, su-no-ti, tud-a-ti*. The distribution of such agentive affixes could then be stated in terms of classes of verbal bases. In a similar manner, one would now say that *-ya-* in passive forms of the type *pac-ya-te* has the meaning

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objectivity or object

679 Forms such as *hanti* are comparable in meaning to *pacati, puṣyati, sunoti, tudati,* but they differ in that no affix comes between the base and an ending. One way in which such forms can be accomodated in the scheme tentatively adopted is evident. An agentive affix can be introduced after a base of the type *han* also, and then replaced by zero. Moreover, since there are Vedic forms of the type *hanati* (cf. A 2.4.73 [158]), one need not make an arbitrary choice among the agentive affixes in forms comparable to *hanti*. The same affix that occurs in *pac-a-ti* will be introduced, then deleted.

680 Problems remain nevertheless. Consider active agentive perfect forms of the type

(173) a. *cakāra* b. *cakartha* c. *cakāra / cakara*

(174) a. *cakratuḥ* b. *cakrathuḥ* c. *cakṛva*

(175) a. *cakruḥ* b. *cakra* c. *cakṛma*

and medio-passive ones of the type

(176) a. *cakre* b. *cakṛṣe* c. *cakre*

(177) a. *cakrāte* b. *cakrāthe* c. *cakṛvahe*

(178) a. *cakrire* b. *cakṛḍhve* c. *cakṛmahe*

These are divisible into two parts: a base with duplication (cf. A 6.1.8 [382]) and endings. In accordance with what has been noted, we should consider that triplets of parasmaipada endings and ātmanepada endings are associated with singularity, duality and plurality; in the forms given, these endings are: *a tha a, atuḥ athuḥ va, uḥ a ma*; *e ṣe e, āte āthe vahe, ire ḍhve mahe*. Since the semantic properties of number qualify agents and objects, one has also to consider attributing the meanings agency and objectivity to some element other than the base. But the only elements other than the iterated base found in these forms are the endings themselves. Nor does any perfect form of this type have an affix between the base and the endings. Consequently, contrary to what was possible in the case of the type *hanti*, one cannot, without being arbitrary, account for (173)-(178) by introducing a particular affix between the base and endings, then deleting it.

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681 Consider also the optatives

(179) a. *bhavet*'... should be, let ... be' b. *bhaveḥ*
c. *bhaveyam*

(180) a. *bhavetām* b. *bhavethām* c. *bhaveva*

(181) a. *bhaveyuḥ* b. *bhaveta* c. *bhavema*

and the precatives

(182) a. *bhūyāt*'may ... be' b. *bhūyāḥ* c. *bhūyāsam*

(183) a. *bhūyāstām* b. *bhūyāstam* c. *bhūyāsva*

(184) a. *bhūyāsuḥ* b. *bhūyāsta* c. *bhūyāsma*

(179)-(181) contain the base form *bhav,* as in the indicative *bhavati*'is, becomes', so that these forms can be considered to have an affix between the base and endings. On the other hand, (182)-(184) have the base form *bhū,* and there is nothing to justify positing the same affix between this base and the endings. See also 696.

682 As far as (173)-(178) and (182)-(184) are concerned, then, one cannot speak of agentive or objective affixes other than endings, of the type found in *pacati, bhavati, puṣyati, sunoti, tudati, pacyate* under the tentative scheme considered earlier. This requires one to reconsider the scheme. For all the verb forms in question are syntactic items that terminate in verb endings. Each such item has at most one high-pitched vowel, and, if it follows a term other than a finite verb form, it generally has no high-pitched vowel (A 6.1.158, 8.1.28 [588, 615]). These facts are accounted for in a most general manner by setting up a class of verb endings, including those found in (173)-(184), and providing that an element which contains such an ending is a syntactic word (*pada*: A 1.4.14 [49]). If all these endings are included in a class, it is reasonable to treat them similarly with respect to the attribution of partial meanings. Let us, therefore, say that parasmaipada and ātmanepada endings are associated not only with singularity, duality, and plurality but also with agency and objectivity (see 138-143).

This means, of course, that the affixes which come between bases and endings in forms such as *pac-a-ti, puṣ-ya-ti, su-no-ti, tud-a-ti, pac-ya-te* can no longer be

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considered to signify agents and objects. Nor is it reasonable to treat these elements as presential affixes, since they occur also in preterital forms like *apacat* (3sg. impf.ct.), *apuṣyat, asunot, atudat, apacyata.*

683 These elements must nevertheless be granted some meaning status. For it is not the case that one can use both *pacati, puṣyati, sunoti, tudati, pacyate* and **pakti, *poṣṭi, *soti, *totti, *pakte,* as though the affixes that come between the bases and endings were totally without value so far as the expression of the meanings in question is concerned. Let us, then, distinguish between signifiers and cosignifiers, and say the following. The ending *ti* in *hanti, pacati, puṣyati,* and so on signifies an agent, as does the ending of *cakāra.* The ending of a passive form such as *pacyate* signifies an object. In specifiable circumstances, however, endings such as *ti* and *te,* which Pāṇini assigns to the sārvadhātuka class, require accompanying affixes as cosignifiers, but endings such as *a* and *e,* which belong to the ārdhadhātuka class (see A 3.4.113-117 [63]), do not require cosignifiers. Thus, *-a-* (*śap*), *-ya-* (*śyan*), *-no-* (*śnu*), *-a-* (*śa*) in *pacati, puṣyati, sunoti, tudati* serve to cosignify an agent, along with *-ti-*, and *-ya-* (*yak*) in *pacyate* serves to cosignify an object. Agents and objects are considered to be signified by the endings *ti, te,* and so on.

684 In terms of Pāṇinian derivations, the distinction between affixes which are signifiers and those that are cosignifiers in forms like *pacati* amounts to the following. One does not have first a stem *paca-* of the type $B\text{-}A_1$ to which an ending is introduced to form a pada *pacati* of the type $B\text{-}A_1\text{-}A_2$. The affix *-a-* of *pacati* is introduced to the base *pac* when this occurs with *ti* which signifies an agent (A 3.1.68 [157]), to form a pada of the type $B\text{-}A_2\text{-}A_1$. Similarly, vikaraṇas like *śyan* are introduced after verbs of particular classes when these occur with sārvadhātuka affixes which signify an agent, and *yak* follows a verb which occurs with a sārvadhātuka

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signifying an object (see 157-158). On the other hand, ārdhadhātuka endings such as *a, e* of perfect forms do not condition the introduction of these vikaraṇas to verbs, although these endings also replace an L-affix, which is introduced on condition that an agent or an object is to be signified (A 3.4.69 [2552]).

685 Verb forms are not the only ones to contain cosignifying affixes. Let us consider now two feminine stems, *ajā-* 'she goat' and *vāc-* 'speech, voice'. The first is related to the base *aja,* and it is perfectly in order to say that the expression of femininity requires the use of a suffix with this base. It is not reasonable to maintain, however, that the expression of femininity always requires an affix, since there are stems like *vāc-*, which obviously do not require feminine affixes. Nor is it necessary or justified to introduce such an affix after a term such as *vāc-* and then delete it. There are no pairs comparable to *hanti, hanati* (see 679), so that introducing any particular feminine affix would be arbitrary. Nor is there any phonological operation associated with *vāc-* that would justify introducing and then deleting an affix. In sum, *vāc* by itself is feminine. Accordingly, Pāṇini does not introduce any feminine affix after such a base, though feminine suffixes are introduced after specified bases (see 271). These affixes are cosignifiers, which occur if a nominal base is used in the feminine (*striyām,* see 273).

686 There are still other instances, where affixes are abstracted which are neither signifiers nor cosignifiers of meanings. The taddhita suffixes *tasil* and *tral* are introduced to padas with nominal endings of the fifth and seventh triplets, respectively (A 5.3.7, 10 [349]). Obviously, *tatas* and *tatra,* formed from complexes such as *tad-as-tas* and *tad-i-tra,* are semantically equivalent to padas like *tasmāt* and *tasmin,* derived from *tad-as* and *tad-i,* with the endings *ñasi, ñi* alone. It is thus impossible to attribute to *tasil* and *tral* any meaning particular to these affixes alone, which they would signify. Nor are these suffixes obviously cosignifiers, since

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they are not required for the expression of a kāraka such as a point of departure or a locus: *tad-as* and *tad-i* contain affixes introduced to signify such kārakas, and they do not absolutely require the taddhita suffixes in question, which are introduced optionally. Accordingly, the Pāṇinian sūtras that introduce these taddhita affixes do not include any meaning conditions: They provide simply that *tasil* and *tral* optionally follow padas with endings of the fifth and seventh triplets, respectively.

One could argue, of course, that not having these affixes even cosignify any meaning is simply a function of the derivational system adopted. After all, a base *tad* does not by itself signify a kāraka, and *tatas, tatra* do indeed have affixes following this base.

587 There are, however, other cases, where a comparable argument is not possible. Consider again A 5.4.28 (355). This sūtra also does not give any meaning condition for the occurrence of the suffix *ka*. Now, the analytic procedure that involves reasoning from anvaya and vyatireka (see 667) leads to abstracting a nominal base *avi* from such forms as *avi-ḥ* (nom. sg.), *avi-nā* (instr. sg.). The same base, or at least a homophonous and synonymous item, *avi* occurs in *avika*, which justifies abstracting an affix *ka*. Yet *avi* and *avi-ka* are absolutely synonymous. Consequently, one has to abstract an affix here that is not linked to any meaning, either as a signifier or as a cosignifier.

Remark.

588 I have used 'signifier' and 'cosignifier' as translations for the Sanskrit terms *vācaka* and *dyotaka*, respectively. A meaning directly signified by a vācaka element is called its *vācya* or *abhidheya* 'significand', one that is cosignified by a dyotaka element is called its *dyotya*. Nāgeśa succinctly explains what constitutes an element's being a dyotaka: It is the property of bringing to mind (*udbodhakatvam*) a

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word-meaning relation between a linguistic element and a meaning that properly pertains to another item, with which the former is used (*samabhivyāhṛta*). [LM 584: द्योतकत्वञ्च समभिव्याहृतगतवृत्त्युद्बोधकत्वम्...] In accordance with this, I have used 'cosignifier' to render *dyotaka*. Kātyāyana and Patañjali also use the term *dyotya* in connection with a meaning cosignified by an element. Thus, in his first vārttika on A 3.1.125 (292), Kātyāyana remarks that if *āvaśyake* is interpreted as referring to a cooccurring item (*upapade*), so that the rule provides for an affix on condition that a verb is used with *āvaśyaka*, an additional provision must be made to let the affixation apply when the meaning in question is to be cosignified (*dyotye*: vt. 1: आवश्यक उपपद इति चेद् द्योत्य उपसङ्ख्यानम्). In his introduction to this vārttika, Patañjali poses the alternatives: Does one understand that the operation applies if the cooccurring item *āvaśyaka* is used or if the meaning 'necessary' is to be cosignified? [Bhāṣya II.88.13-14: कथमिदं विज्ञायते आवश्यक उपपदे आहोस्विदावश्यके द्योत्य इति।] Both signifiers and cosignifiers are meaningful (*arthavat*) elements. Elements such as the *ka* of *avika* (687), on the other hand, are not. Concerning such items, Patañjali explicitly says that they do not convey (*na ... pratyāyayanti*) anything. [Bhāṣya II. 3.8-9: न हि ते किञ्चित् प्रत्याययन्ति।] For additional discussion concerning such affixes, which Pāṇinīyas call *atyantasvārthika* 'absolutely redundant', see pp. 90-94 of the last work referred to in 669.

4.1.4. Positing augments.

689 Consider the following sets of forms:

(185) a. *kṣipyate* 'is thrown' b. *kṣipta* (past ptcple.) 'thrown' (nom. sg. masc. *kṣiptaḥ*) c. *kṣiptvā*

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'after throwing' d. *kṣeptum* 'to throw'

(186) a. *vidyate* 'is known' b. *vidita* 'known'
c. *viditvā* 'after learning, having known'
d. *veditum* 'to know'

The procedure outlined in Section 4.1 allows one to abstract from (185) a base with the shapes *kṣip, kṣep* meaning 'throw' and affixes that follow this base: *ya, te, ta, tvā, tum.* Set (186) obviously resembles (185). The only semantic differences among respective members of the two groups are such as one should consider accounted for by a difference in bases. Thus, *vidyate* is immediately divisible into three constituents: the base *vid* 'know' and the affixes *ya, te,* which also occur in *kṣipyate.* On the other hand, b-d of (186) contain a segment *i* that is absent in the comparable forms of (185).

690 If the basis for abstracting affixes, to which particular meanings are attributed, is substitution in given contexts and reasoning from anvaya and vyatireka (see 667-668), it is not proper to treat *vidita, viditvā,* and *veditum* as tripartite derivates with an affix *i* between the base *vid, ved* and the affixes *ta, tvā, tum.* The semantic difference between these forms and the comparable ones in (185) is accounted for by the difference in bases alone, so that there remains no meaning that an affix *i* can signify. Nor is it reasonable to claim that the *i* of forms in (186) is a cosignifying affix (see Section 4.1.3). *kṣipyate, vidyate* contain an ending *te,* which signifies an object (*karman*), and an affix *ya,* which cosignifies this. Under the assumption that *vidita* contains a cosignifying affix *i,* one would be required to say that this and *kṣipta* both have a suffix *ta* signifying an object and that the element *i* of *vidita* cosignifies this meaning. In *viditvā, veditum,* however, the same suffix would have to be treated as cosignifying other meanings. The fact is that the occurrence of this element *i* is best described in terms of classes of verbs and post-verbal affixes, together with phonological features of the latter (see 144-153).

691 There remain two major alternatives: (a) The element *÷i-*

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of items such as (186b-d) can be treated as a meaningless segment that occurs between certain bases and affixes. (b) This segment can be treated as part of another element: (b1) part of a base (*vidi-ta, vidi-tvā, vedi-tum*) or (b2) part of an affix (*vid-ita, vid-itvā, ved-itum*). The choice between (a) and (b) depends on the particular mode of grammatical description adopted.

Suppose that to account for the distribution of *kṣip, kṣep* in (185) one stated that: 'there are base forms which have alternants with *-i-* and *-e-*; the alternant with *-i-* occurs in certain contexts, the alternant with *-e-* in others, as in (185). In such a system, there is no apparent crucial difference between alternatives (a) and (b). One could now also say that certain bases have alternants with *-i* in particular contexts. Alternatively, one could say that particular affixes have alternants with initial *i-* in statable contexts, as in (186). In addition, this *i* could be treated simply as a "connecting vowel" that comes between particular bases and affixes. Since the description is now couched in terms of given alternants in given contexts, none of these possible formulations is crucially worse than the others. As I have pointed out, however, this is not Pāṇini's mode of description. Pāṇini's is a derivational system that involves introducing affixes to bases. Both bases and affixes have basic forms, subject to operations in particular contexts. For example, the basic form of the verb in (185) is *kṣip,* and the *-i-* of the stem *kṣip-* is replaced by *-e-* when particular affixes follow (A 7.3.86 [127]).

692 Suppose now that the *-i-* of forms in (186b-d) were treated in this system as an element introduced between a base and an affix. There would now be two ways of deriving a form like *veditum*: (a1) *i* is introduced between *vid* and the suffix *tum,* then guṇa substitution applies: *vid-tum* > *vid-i-tum* > *ved-i-tum.* (a2) Guṇa substitution is conditioned by *tum* before *i* is introduced: *vid-tum* > *ved-tum* > *ved-i-tum.* Under (a1), two rules are necessary to account for the base vowels in *kṣeptum, veditum.* One rule provides for a

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guṇa vowel to replace a penultimate base vowel in a stem followed by an affix such as *tum*. Since the *-i-* of *vid* in *vid-i-tum* is not the penultimate sound of the stem which *tum* follows, another rule is required to let guṇa substitution apply also before this segment *i*. In addition, the right context in question has to be this segment followed by an affix which itself conditions guṇa replacement. Otherwise, one would allow forms such as **veditvā* instead of *viditvā*, since under (a1), one should have *i* introduced after *vid* to derive *vid-i-tvā*.

Alternative (a2) also involves complications. As can be seen from *kṣiptvā*, the suffix *tvā* does not regularly condition guṇa replacement in a stem. In the derivation of *vid-i-tvā* under (a2), then, no operation applies other than the introduction of *i*. But consider also the following:

(187) a. *iṣita* b. *eṣitvā* (*iṣ* 'go, move, send')

(188) a. *likhita* b. *lekhitvā* / *likhitvā* (*likh* 'write')

Under alternative (a2), *eṣitvā* is derived as follows: *iṣ-tvā* > *eṣ-tvā* > *eṣ-i-tvā*. *lekhitvā* is now derived similarly. Of course, this will not do for *likhitvā*. One cannot now allow *likh-tvā* > *lekh-tvā* before introducing *-i-*. In fact, alternants such as *likhitvā* and *lekhitvā*, with the suffix *tvā* and optional guṇa substitution in the base, are the norm only if the segment *i* occurs with this suffix. It would be preferable, then, to have this segment introduced before guṇa replacement applies. As noted, this entails two rules of guṇa substitution accounting for the types *kṣeptum* and *veditum*. This is also the case if *i* is introduced as part of a base. The fact remains that it is preferable to introduce the segment *i* before a rule of guṇa substitution applies.

693 Let us now take up possibility (b2) of 691, letting *i* of forms like *vidita*, *viditvā* be treated as part of an affix. *ta* and *tvā* are suffixes that do not regularly condition guṇa replacement, but *tum* does regularly condition this substitution. The augmented affixes *ita*, *itum* have the same properties. Under the possibility being considered, *kṣip-tum* and *vid-itum* both

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contain stems with penultimate *-i-* followed by an affix that conditions guṇa replacement, which is now accounted for by a single rule. Under any of the possible procedures, special rules are required to account for forms like *eṣitvā, lekhitvā*. If *i* is introduced as an initial augment, one rule will provide that *tvā* so augmented regularly conditions guṇa substitution. This accounts not only for *eṣitvā* but also for other instances, such as *devitvā* (*div* 'gamble'), *vartitvā* (*vṛt* 'occur, be'). Another rule will provide that *tvā* augmented with initial *i* optionally conditions guṇa replacement if the base in question begins with a consonant, has a penultimate *i*- or *u*-vowel, and ends with a consonant other than *y* or *v*. This accounts not only for *lekhitvā*/ *likhitvā* but also for pairs such as *dyotitvā* / *dyutitvā* (*dyut* 'flash, shine'). Treating *i* as an initial augment is obviously preferable to the other possible procedures in that one can thereby treat guṇa replacement in the types *kṣeptum, veditum* as a single phenomenon: a penultimate vowel *i ī u ū ṛ ṝ* is replaced by a guṇa vowel. This is Pāṇini's manner of accounting for the facts in question (A 1.2.18, 26, 8 [517, 519, 520]).

694 Consider now

(189) a. *cita* 'gathered, heaped' b. *nīta* 'led, guided'
c. *stuta* 'praised' d. *pūta* 'purified, filtered'

(190) a. *cetavya* 'to be gathered, heaped' b. *netavya* 'to be led, guided'

(191) a. *stavya* 'to be praised' b. *pavya* 'to be purified'

(192) a. *somasut* 'someone who has pressed out Soma juice'
b. *khalapū* 'someone who sweeps a threshing floor'

(193) a. *upastutya* 'after praising' b. *paripūya* 'after purifying fully'

The items in (189) contain the bases *ci, nī, stū, pū* followed by the suffix *ta*. In (190), the base forms *ce, ne* are followed by *tavya*. For the moment, let us take it as given that one is justified in positing *ci, nī* as basic forms (see 788-790), so that *cetavya* and *netavya* are derived from *ci-tavya* and

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nī-tavya; similarly, *stavya* and *pavya* are derived from *stu-ya* and *pū-ya* (A 3.1.96, 97, 7.3.84, 6.1.80 [121, 122, 127, 524]). In comparable forms, then, bases with short vowels (*ci, stu*) and bases with long vowels (*nī, pū*) behave similarly. The items of (192) are also comparable: Both are compounds in which the first constituent denotes an object of the action denoted by the base in the second component. Although bases in *-u* and *-ū* behave similarly elsewhere, however, *somasut* has *-t*, which *khalapū* lacks. In the same way, *upastutya* and *paripūya* both contain the affix *ya,* but the former also has *-t-*, which the latter lacks. There is thus a correlation between the length of a vowel and the presence or absence of *t* in such derivates. It is, then, not proper to claim that *t* in any of the forms in question is an agentive affix. Nor can this be treated as a cosignifying affix. It is best considered a meaningless augment introduced as part of other elements in particular contexts. The derivate *somasut* has *t* in all its forms, such as *somasut* (nom. sg.), *somasutau* (nom. du.), *somasutaḥ* (nom. pl.), so that this segment has to be treated as the final sound of the compound. Moreover, since the *t* found in *upastutya* also occurs with a short vowel, it too should be treated as a final augment. Pāṇini provides for adding the final augment *tuk* to a short vowel when particular affixes follow (A 6.1.71 [394]).

695 The pairs in

(194) a. *ahanī* (nom.-acc. du.) b. *ahāni* (nom.-acc. pl.) 'days'

(195) a. *haviṣī* b. *havīṁṣi* 'oblations'

(196) a. *dhanuṣī* b. *dhanūṁṣi* 'bows'

consist of related dual and plural forms. The duals *ahanī, haviṣī, dhanuṣī* are immediately divisible into stem forms *ahan-*, *haviṣ-*, *dhanuṣ-* and an ending *ī*. The plural *ahāni* is also divisible into an ending *i* and a stem preceding it, except that here the penultimate vowel of the base is long. The plural forms *havīṁṣi* and *dhanūṁṣi* also contain the ending *i* and have long vowels in the stems that precede this ending. In this way, they are comparable to *ahāni*. They also contain a nasal

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segment *-ṁ-*, which *ahāni* lacks. The only differences in meaning among the plural forms of (194)-(196) are accounted for by the differences in bases. Here also, therefore, one should operate with an augment, this one added within a base (see A 7.1.72 [488]).

696 Let us now revert briefly to the forms given in (179)-(184) (681). Modern grammarians of the west and those who accept their analyses generally recognize several suffixes, labelled 'optative' and 'precative' or 'benedictive'. For example, *hanyāt* would be considered to contain the base *han,* the optative suffix *yā,* and the ending *t;* *bhūyāsam* would be divided into the base *bhū,* the precative suffix *yās,* and the ending *am;* and *āsīta* would be divided into the base *ās,* the middle optative suffix *ī,* and the ending *ta.* As far as forms of the type *pacet* are concerned, one could either simply abstract an optative suffix *e* or consider *-e-* to derive from *-a-ǐ-,* with an optative suffix *ǐ,* and the post-verbal affix found also in *pacati.* Considerations of patterning speak in favor of the second alternative: *hanyāt* lacks a vikaraṇa, as does *hanti,* so that, just as *pacati* contains a vikaraṇa, so should the corresponding optative. Recall, however, that in Pāṇini's system any finite verb form such as *bhavati, bhavet, pacati, pacet, sunoti, sunuyāt* is made up of at most three parts: a verbal base, an ending, and a vikaraṇa between these two. This analysis is dictated by the very procedure of abstracting components (see 667-668). Thus, *bhav-a-ti, pac-a-ti* consist of the bases *bhav* (< *bhū*), *pac,* the ending *tip* --- all of which signify particular meanings --- and the vikaraṇa *śap,* which cosignifies a meaning (see 683). Similarly, *sunoti* contains the base *su,* the ending *tip,* and the vikaraṇa *-no-* (< *-nu-*: *śnu*). The same post-verbal affix occurs in *sunuyāt.* Moreover, given that *bhavet, pacet* have the same base forms as in *bhavati, pacati,* one is justified in saying, for reasons of patterning, that *bhavet* and *pacet* contain *śap.* In this system one cannot operate with a suffix such as *yā* or *ǐ* in addition to the vikaraṇas and endings, so that the element *yā* found in

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sunuyāt and such is considered an augment added to a verb ending, and other optative and precative forms are derived in a comparable manner (see 401, 442).

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4.2. Basic forms posited in the grammar.

4.2.0. Introduction.

697 Pāṇini's derivational system requires that he operate with posited basic forms of bases and affixes, subject to replacement and augmenting. He must, then, have decided which of a set of variants should be treated as basic with respect to others. In some instances, the choice to be made is just about obvious. For example, given

(197) a. *ṛṣiḥ* (nom. sg.) b. *ṛṣyoḥ* (gen.-loc. du.) 'seer, sage'

(198) a. *devī* b. *devyoḥ* 'goddess, queen'

(199) a. *vāyuḥ* b. *vāyvoḥ* 'wind'

(200) a. *vadhūḥ* b. *vadhvoḥ* 'bride'

the variants *ṛṣi, devī, vāyu, vadhū* should be treated as basic with respect to *ṛṣy, devy, vāyv, vadhv*. A phonological rule lets the vowels of (197a)-(200a) be replaced by corresponding semivowels before a vowel (A 6.1.77 [125]). If, on the other hand, *ṛṣy* and so on of (197b)-(200b) were posited as basic variants, not only would a rule have to let *i* or *ī* and *u* or *ū* replace *y, v* before consonants, in addition, one would now have to specify where short and long vowels replace semivowels. This alone would suffice to make the first alternative preferable. It is not all, however, since there is a phonological rule whereby *y* and *v* are deleted before consonants other than *y* (A 6.1.66 [522]). Having posited a basic form *vāyv*, then, one would have to specify that *-y-* is not dropped in certain instances. And these would be precisely where basic items like *vāyv* have been posited. To be sure, even if *vāyu* is made the basic variant, one has to preclude the deletion of *-y-* followed by *v* as a result of semivowel substitution (see A 1.1.57 [101, 104]), but one has now not begun by positing a basic form that conflicts with a phonological rule. Clearly, the variants with final vowels, (197a)-(200a) must be considered basic relative to those with final semivowels.

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698 In other instances, more serious consideration has to be given to possible choices. Recall now that there are general principles which underlie Pāṇini's grammar (Section 3). The very basis for this, or any other, grammar, is generalization, so that rules are couched in terms of general domains and subdomains within these, where general rules and exceptions to them apply. In accordance with this, that member of a set of variants should be considered basic which has the broadest domain. Other variants are then accounted for through operations that apply to the basic form in particular contexts. There are also cases where rules related in a certain manner dictate the decision to make a given variant basic. Finally, since an initial string must contain only overt bases and affixes, including abstract ones such as L-affixes, it follows that zero can only be a replacement, not a basic element. In what follows, I shall present arguments showing how one can, in the context of Pāṇinian grammar, decide which of a set of variants is to be posited as basic. I do not wish to pretend that these are precisely the arguments Pāṇini considered. On the other hand, it is patent that Pāṇini has indeed made well founded decisions concerning which variants should be accepted as basic. Hence, I consider it reasonable to say that Pāṇini considered alternatives, including some adopted by predecessors, and reached decisions on the basis of arguments comparable to if not identical with those I shall present.

4.2.1. Basic forms and phonologically conditioned variants.

699 The following are genitive plural forms:

(201) a. *senānām* 'armies' b. *agnīnām* 'fires' c. *vāyūnām* 'winds'

(202) a. *puruṣāṇām* 'men' b. *ṛṣīṇām* 'seers, sages' c. *pitṝṇām* 'fathers, ancestors'

The endings *-nām* and *-ṇām* should be abstracted. These are best accounted for by considering *-nām* basic and letting *-ṇ-*

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substitute for *-n-* preceded by *ṛ, ṝ,* or *ṣ* in the same pada (see A 8.4.1-2 [570]). As can be seen, the domain of *-nām* is larger than the domain of *-ṇām,* which occurs when one of the above mentioned sounds or *-ṇ-* (< *ḍ*) precedes, as in *ṣaṇṇām* < *ṣaḍ-nām* (see A 8.4.41-42, 45 [574-575]). Moreover, it is difficult to justify a rule whereby *-n-* replaces *-ṇ-* not preceded by one of these sounds, since there are items such as *kaṇa* 'minute part, atom', *pāṇi* 'hand', *kaṇṭha* 'throat', *daṇḍa* 'staff, punishment'.

700 (203) a. **कटमकार्षीत्।** (*kaṭam akārṣīt*) '... made a mat.'

b. **कटं करोति।** (*kaṭaṁ karoti*) '... is making a mat.'

c. **कटङ्करोति।** (*kaṭaṅ karoti*) '... is making a mat.'

(204) a. **फलमचैषीत्।** (*phalam acaiṣīt*) '... picked a fruit.'

b. **फलं चिनोति।** (*phalaṁ cinoti*)

c. **फलञ्चिनोति।** (*phalañ cinoti*) '... is picking a fruit.'

(205) a. **ओदनमपाक्षीत्।** (*odanam apākṣīt*) '... cooked rice.'

b. **ओदनं पचति।** (*odanaṃ pacati*)

c. **ओदनम्पचति।** (*odanam pacati*) '... is cooking rice.'

(206) a. **केदारमलावीत्।** (*kedāram alāvīt*) '... cut the field.'

b. **केदारं लुनाति।** (*kedāraṁ lunāti*)

c. **केदारल्लुनाति।** (*kedāralm̃lunāti*) '... is cutting the field.'

contain variants *katam kaṭaṁ: kaṭaṅ, agnim agniṁ agniñ, odanam odanaṁ odanam, kedāram kedāraṁ kedāralm̃,* with *-m,* anusvāra (*ṁ*) and nasal sounds (including nasalized */: lm̃*) of the same class as following sounds. These variants are immediately describable in terms of basic forms with *-m* and

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two replacements: *-ṁ* replaces pada-final *-m*; *-ṁ* is optionally replaced by a sound homogeneous with a following consonant other than a spirant (A 8.3.23, 8.4.58-59 [559, 580]).

It would violate a general principle to select variants with *-ṅ, -ñ* or nasalized semivowels as basic in view of their restricted distribution. Nor is it plausible to consider variants with *-ṁ* basic. If this were done, one would have a rule providing for *m* to replace *ṁ* before vowels. Now,

(207) a. *hanti* (3sg. pres. indic.) b. *haṁsi* (2sg.) c. *hanmi* (1sg.) d. *hanati* (3sg. subj.) 'strike, kill'

shows variants *han, haṁ*. Were one to posit a basic form *haṁ* and let the substitution of *m* for *ṁ* apply, one would allow **hamati* instead of *hanati*. Similarly, **bhumajatai* must not be allowed instead of *bhunajatai* (3sg. subj.). Moreover,

(208) a. *bhuṅkte* b. *bhuṅkṣe* c. *bhuñje* d. *bhunajatai* 'enjoy, eat'

shows variants *bhuṅk-, bhuñj-*, depending on the nonnasal consonant that follows the nasal, just as in (203c) and (204c), but there is no variant *bhuṁk-* or *bhuṁj-*. All is in order, however, if *han* and other variants with *-n* are treated as basic relative to variants with *-ṁ, -ṇ, -ñ* and a rule provides that pada-interior *n* is replaced by *ṁ* before certain consonants (A 8.3.24 [559]). Both pada-interior *ṁ* from *m* or *n* and pada-final *-ṁ* from *-m* are then subject to the same assimilatory replacements, which apply optionally for pada-final *-ṁ*.

701 Before *t-*, one has not only forms with *-as*, such as *payas* in (156)-(157) (670) but also forms, of the same grammatical categories, in *-is* and *-us*, such as *sarpis* 'butter' and *dhanus* 'bow'. Corresponding to such nominative and accusative forms, there are instrumental singulars *payasā*, as in (158), and *sarpiṣā, dhanuṣā*. The variants with *-s* and *-ṣ* are best accounted for by positing basic forms with *-s* and letting this be replaced by *-ṣ* after velar stops and vowels other than *a ā*, except in pada-final position (A 8.3.59 [563]). It is not proper to posit basic *sarpiṣ, dhanuṣ, payaṣ*, and to have *-s* replace

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-ṣ in pada-final position and following *a ā*. To begin with, there are items like *māṣa* 'a kind of bean', so that one cannot claim *ṣ* is always replaced by *s* when an *a*-vowel precedes it in the interior of a pada, in order to account for the fact that forms of the type *payaṣ-* do not occur. In addition, consider

(209) a. *tviḍ / tviṭ* (nom. sg.) b. *tviṣā* (instr. sg.)
c. *tviḍbhiḥ* (instr. pl.) d. *tviṭsu* (loc. pl.) 'splendor'

(210) a. *dviḍ / dviṭ* b. *dviṣā* c. *dviḍbhiḥ* d. *dviṭsu* 'enemy'

Since there are items like *kaṭa* 'mat', *paṭu* 'sharp', one should not posit forms with basic *-ṭ* to be replaced by *-ṣ* between vowels. Nor, in view of items such as *mṛḍayati* 'is merciful', should one posit basic *-ḍ* subject to replacement by *-ṣ* between vowels. On the contrary, the items in (209)-(210) are best treated as derived from basic *tviṣ, dviṣ*: pada-final *-ṣ* is replaced by *-ḍ*, for which *-ṭ* substitutes optionally in absolute final position (A 8.2.39, 8.4.56 [546, 578]).

Thus, *sarpiṣā, dhanuṣā* are to be accounted for through retroflex substitution: *sarpis-ā* > *sarpiṣā, dhanus-ā* > *dhanuṣā*.

702 Retroflexion will also account for *-ṣu* in

(211) a. *agniṣu* b. *vāyuṣu* c. *pitṛṣu* d. *dhūrṣu* 'yokes'
e. *vākṣu* f. *sarpiḥṣu* g. *dhanuḥṣu*

as against *-su* in

(212) a *senāsu* b. *payaḥsu* c. *tviṭsu* d. *dviṭsu*

Now, *tviṭsu* and *dviṭsu* have *-ṭ*, as do *tviṭ* and *dviṭ* of (209)-(210). In effect, it is proper to say there is a pada boundary between *-su* and a preceding stem (A 1.4.17 [75]). Similarly, one has *sarpiḥṣu* and *dhanuḥṣu*, with *-ḥ* before the ending (*-ṣu* < *-su*: A 8.3.58-59 [563]).

703 *payas, sarpis, dhanus* (see 670, 701) are members of sets of variants with: *-ḥ* before pause and, optionally, before voiceless spirants; *-ḥ* or *-ˣk* before voiceless velar stops; *-ḥ* or *-ˣp* before voiceless labial stops; *-ś* before voiceless palatals; *-iṣ, -uṣ* before voiceless velars, retroflex stops, and labials; and *-s* before voiceless dentals (see A 8.3.15, 34-37, 44, 101, 8.4.40-41 [557, 561, 562, 568, 574]). Similarly,

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(213) **दहत्यग्निः।** (*dahaty agniḥ*) 'Fire burns.'

(214) **ग्रामङ्गतो देवदत्तः।** (*gramaṅ gato devadattaḥ*) 'Devadatta has gone to the village.'

(215) a. **अग्निः काष्ठानि दहति।** (*agniḥ kāṣṭhāni dahati*)

b. **अग्निꣳकाष्ठानि दहति।** (*agniꣳk kāṣṭhani dahati*) 'The fire is burning the logs.'

(216) a. **देवदत्तः कुम्भान्करोति।** (*devadattaḥ kumbhān karoti*)

b. **देवदत्तꣳकुम्भान्करोति।** (*devadattaꣳk kumbhān karoti*) 'Devadatta makes pots.'

(217) a. **अग्निः प्रज्वलितः।** (*agniḥ prajvalitaḥ*)

b. **अग्निꣳप्रज्वलितः।** (*agniꣳp prajvalitaḥ*) 'The fire has flamed up.'

(218) a. **देवदत्तः प्रस्थितः।** (*devadattaḥ prasthitaḥ*)

b. **देवदत्तꣳप्रस्थितः।** (*devadattaꣳp prasthitaḥ*) 'Devadatta has left.'

(219) **अग्निश्च दृश्यते।** (*agniś ca dṛśyate*) 'A fire can also be seen.'

(220) **देवदत्तश्चतुर्थः।** (*devadattaḥ caturthaḥ*) 'Devadatta is the fourth.'

(221) **अग्निस्तत्र।** (*agnis tatra*) 'There is a fire there.'

(222) **देवदत्तस्तत्र।** (*devadattas tatra*) 'Devadatta is there.'

also show variants with *-ḥ, -ꣳk, -ꣳp, -ś,* and *-s,* except that the spirants here are forms of an ending (nom. sg.). Since *sarpis* and *agnis* are alike, one may consider that here also *s* should be treated as basic. This is also supported by examples like *sarpiṣṭva* and *agniṣ ṭád...* (see 568).

In view of sets such as

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(223) a. *viḍ / viṭ* b. *viśā* c. *viḍbhiḥ* d. *viṭsu*
'settlement'

one should not treat *-ś* in *agniś, devadattaś* as the basic variant. For reasons given concerning (209)-(210) (701), it is not proper to consider *viḍ* or *viṭ* basic. It is best, instead, to posit basic *viś*: *-ḍ* occurs in place of pada-final *-ś* (by way of *-ṣ*: A 8.2.36, 39 [544, 546]). Accordingly, *agniś* and *devadattaś*, with pada-final *-ś*, should not be derived from basic forms with *-ś*. Nor should *-ṁk* or *-ṁp* be considered basic, given the restricted domains of these variants.

Now, if *-ḥ* were treated as basic, one would have to provide that *-ḥ* is replaced by *ṁk* and so on in the contexts noted above. In addition, to account for forms like *sarpiṣā* starting from *sarpiḥ-ā*, one would have to say that *-ṣ* replaces *-ḥ* in the interior of a pada. It is thus recognized that *-ḥ* is essentially a pada-final variant. This makes it difficult indeed to posit a locative plural ending *-ḥu* to derive forms such as (211f-g) *sarpiḥṣu* and *dhanuḥṣu* (see 702). The initial sound of this affix is, by the very nature of the unit in question, excluded from occurring in pada-final position; yet it is now given a basic form with an initial sound that regularly occurs only in this position. Of course, it is possible to say that this ending is *su* and to maintain at the same time that items like *sarpiṣā, dhanuṣā* derive from nominals with basic *-ḥ*. However, this entails stating two rules of retroflexion, for *ḥ* and *s* separately, which obliterates the essential unity of the process.

It is best, therefore, to posit basic forms *sarpis, dhanus*, and so on, with *-s*, and to have *-ḥ* occur as a replacement at an intermediate stage of derivation.

704 The facts are still more complicated, however. (213)-(218) have forms in *-iḥ, -aḥ*, and so on in a pattern of absolute parallelism. There are also contexts in which there is no such parallelism. Thus,

(224) a. अग्निरिहा (*agnir iha*) 'There is fire here.'

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b. अग्निरत्र। (*agnir atra*) 'There is fire here.'

c. अग्निर्दहति। (*agnir dahati*) 'Fire burns.'

have *agnir* before *i-* (*iha* 'here'), *a-* (*atra* 'here') and the voiced consonant *d-*. In the same contexts, one has *sarpir* and *dhanur*. But one does not have * *devadattar*:

(225) a. देवदत्त इह। (*devadatta iha*)

b. देवदत्तोऽत्र। (*devadatto'tra*)

c. देवदत्तो दृष्टः। (*devadatto dṛṣṭaḥ*) 'Devadatta has been seen.'

Similarly, one has *paya, payo* in these contexts. Given what has been shown, let us consider it best to say that here too there are items with basic *-s* (*agnis* and so on), and that pada-final *-s* is replaced by *-r* in specific environments, but that *-as* is treated in a particular manner.

Consider now *punaḥ* 'again, but' and

(226) a. किं पुनः करोति। (*kiṁ punaḥ karoti*)

b. किं पुनꣳकरोति। (*kiṁ punaꣳk karoti*) 'But what is he doing?'

(227) a. कदा पुनः प्रस्थितः। (*kadā punaḥ prasthitaḥ*)

b. कदा पुनꣳप्रस्थितः। (*kadā punꣳp prasthitaḥ*) 'But when did he leave?'

(228) किं पुनश्चोदयति। (*kiṁ punaś codayati*) 'But what is he objecting to?'

(229) पुनरिह वसति। (*punar iha vasati*) '... is staying here again.'

(230) पुनरधीते। (*punar adhīte*) '... is studying again.'

(231) पुनः पुनर्दृश्यते। (*punaḥ punar dṛśyate*) '... is seen repeatedly.'

(226)-(231) have *punaḥ* and so on, completely parallel to *devadattaḥ* etc. in (214) and other examples given in 703.

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However, *punar* in (229)-(230) contrasts with *devadatta* and *devadatto* in (225). If *devadattas* is posited as the basic form from which *devadatta* and so on are derived, one cannot posit basic *punas*. Consequently, it is necessary to recognize items with basic *-s* and others with basic *-r*. Thus, although both *agnir* and *punar* occur before voiced sounds and

(232) a. *sarpirbhiḥ* b. *dhanurbhiḥ* c. *caturbhiḥ*

also have *-r* before a voiced consonant, *caturbhiḥ* is to be treated as a form of a base *catur* 'four'. The ending *bhis* has a pada boundary before it (A 1.4.17 [75]), but the accusative plural ending *as* (*śas*) does not, so that *caturaḥ* cannot be derived from *catus* with the substitution of *-r* for *-s* in pada-final position. Conversely, the locative plural ending *su* (*sup*) is preceded by padas, but

(233) a. *caturṣu* b. *dhūrṣu*

have pada-final *-r* before this ending, as against *-ḥ* in *sarpiḥṣu* and *dhanuḥṣu*, which speaks in favor of positing basic forms *catur* and *dhur* 'yoke'.

705 Nevertheless, it is patent that items with basic *-s* and *-r* have like forms in certain contexts. *agnir* and *punar* occur before voiced sounds; *agnī* and *punā* have final long vowels before *r-*, as in

(234) अग्नी रक्षांसि सेधति। (*agnī́ rákṣāṁsi sedhati* [RV 7.15.10a]) 'Agni drives away the demons.'

(235) वस्त्रम्पुनारक्तम्। (*vastram punā raktam*) 'The garment has been dyed again.'

Further, not only do items with basic *-r* have forms with *-s*, they also have forms with *-ṣ*, comparable to those in which *-s* has undergone retroflex substitution. For example, *catuṣṭaya* 'group of four' clearly must be treated as a derivate of *catur*.

706 Since Pāṇinian rules are intended to be as general as possible, it follows that where basic *-s* and *-r* behave in the same way, this should not be set forth in rules which treat these separately. The rules should bring out what *-s* and *-r* have in common by letting shared operations apply to both of

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them. One way to accomplish this is to bring original *-s* and *-r* together through substitution. As can be seen from (229)-(231) and (232)-(233) (704), it is difficult to justify doing this by letting *-s* replace pada-final *-r*. Pāṇini brings together basic *-s* and *-r* by letting *-R* (*ru*) substitute for pada-final *-s* (A 8.2.66 [551]). Both original *-r* and *-R* are replaced by *-ḥ* before voiceless consonants and in pre-pause position (A 8.3.15 [557]). Before particular consonants, then, *-ḥ* undergoes additional replacements (see 561-562). One of the substitutes is *-s*, which is subject to assimilatory replacements (A 8.5.40-41 [574]). Another operation *-r* and *-R* have in common is that they are both dropped before *r-*, with consequent lengthening of a preceding vowel (A 8.3.14, 6.3.111 [556, 523]).

There are also operations particular to *-R*. Only this is replaced by *-y* when preceded by *a* or *ā* and followed by a vowel (A 8.3.17 [557]), by *-u* when it follows *a* and occurs before *a-* or a voiced consonant (A 6.1.113-114 [525]), and only *-R* is replaced by *-ḥ* before a nominal ending (A 8.3.16 [557]).

707 The decision to posit basic *-s* is not necessarily always based on strictly phonological criteria. Consider again the variants of *agnis* (see 703-705). One could conceivably posit *agnir* as the basic form of the pada in question. Moreover, in Pāṇini's system, the fact that Vedic usage has examples such as *agniṣ ṭad* does not necessarily speak against positing basic *agnir*, since in this grammatical system *-r* followed by a voiceless consonant is replaced by *-ḥ*, with subsequent substitution by *-s*. In addition, given that deletion of *-r* before *r-* applies whether the first consonant is basic *-r* or a replacement for *-s*, *agnī* in (234) could be derived starting with basic *agnir*. What determines the choice of *agnis* over *agnir* is a systematic consideration. The item in question is a pada made up of the nominal base *agni* and a nominal ending. This ending is *s* (*su*) in padas like *devadattas*, where phonological considerations definitely require positing basic *s* instead of *r*.

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708 Recall now that *tviṣ, dviṣ,* and *viṡ* are posited to account for forms such as those in (209)-(210), (223) (701, 703). Similarly, one should posit *cit* 'thought', *śarad* 'autumn', and *vīrudh* 'plant' to account for

(236) a. *cid / cit* b. *citā* c. *cidbhiḥ* d. *citsu*

(237) a. *śarad / śarat* b. *śaradā* c. *śaradbhiḥ* d. *śaratsu*

(238) a. *vīrud / vīrut* b. *vīrudhā* c. *vīrudbhiḥ* d. *vīrutsu*

Pada-final *-t, -dh* are replaced by *-d* (A 8.2.39 [546]); *-t* substitutes for *-d* before voiceless consonants and, optionally, before pause (A 8.4.55-56 [578]). In accordance with such patterning, *vāc* 'speech, voice' and *sraj* 'garland' are posited to account for

(239) a. *vāg / vāk* b. *vācā* c. *vāgbhiḥ* d. *vākṣu*

(240) a. *srag / srak* b. *srajā* c *sragbhiḥ* d.. *srakṣu*

Pada-final palatal consonants like *-c, -j* are replaced by their velar counterparts *-k, -g* (A 8.2.30 [544]). The same rules as apply to derive *cid* and so on then apply to replace *-k, -g* with *-g,* subject to subsequent replacement by *-k.*

Remarks.

709 1. I consider it certain that Pāṇini knew of basic forms different from the ones with which he operates, that he considered alternatives and reached decisions determined by his system of description and the rules formulated in the Aṣṭādhyāyī. As I pointed out in 666, Pāṇini knew the padapāṭha to the Ṛgveda. A padapāṭha gives an analyzed text corresponding to a continuously recited text (*saṁhitāpāṭha*), by dividing the latter into constituent padas. For example, to अग्निष्टद्विश्वमापृणाति (RV 10.2.4c, see 568) the corresponding padapāṭha text is अग्निः। तत्। विश्वम्। आ। पृणाति। (*agniḥ / tát / víśvam / á / pṛṇāti*). Padas are generally separated by pauses, so that they appear in their pre-pause forms: *agniḥ*

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and so on. That the padapāṭha systematically divides the text of the saṁhitāpāṭha implies a relation between the two such that one can be treated as derived from the other; and, indeed, rules of prātiśākhya treatises such as Śaunaka's Ṛgvedaprātiśākhya formulate the changes needed to derive the saṁhitāpāṭha from the padapāṭha. It is difficult to see how, knowing Śākalya's padapāṭha, Pāṇini could avoid considering the possibility of positing items with basic *-ḥ*. That he posits basic *-s* and *-r* instead, I consider to result from his having thought out alternatives within his grammatical system. His grammar does not start with a given text to be analyzed. It presupposes an analysis. Nor does Pāṇini begin with padas. In his derivational system, padas result from adding affixes to stems. I shall consider details regarding various padapāṭhas and related prātiśākhya rules in part VI.1 of my work.

710 2. It is known that there are no well attested nominal bases in which velar stops occur before vocalic endings. Pāṇini does use forms like *ikaḥ* (A 6.1.77 [125]), but this is not a normal form of the language described in the grammar, where violations of the regular phonological rules of Sanskrit are permitted as required by the metalanguage. Still, it cannot be ruled out that a nominal base such as *śak* 'able, capable' could have been used at some time, since there is an open-ended set of root nouns. Note, however, that even if, as is probable, there were no nominal bases in *-k* used in the Sanskrit of Pāṇini's time and place, he could make a well founded decision to posit basic *vāc* and *sraj* to account for forms such as those in (239)-(240) (708). The derivation of forms in (236)-(238) involves substitutions for pada-final consonants. Positing *vāc, sraj* and having pada-final *-c, -j* undergo replacement conforms to this pattern. I point this out only to avoid suggesting that Pāṇini was somehow operating with a procedure akin to the one known as internal reconstruction, which can depend crucially on the neutralization of phonemic contrasts in part of a morphological set.

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4.2.2. Basic nominal endings.

711 Pāṇini does not treat words (*pada*: A 1.4.14 [49]) in isolation. In the Pāṇinian system, they are derived as elements related syntactically and semantically to other words of utterances (Section 2). Sūtras of the Aṣṭādhyāyī provide that nominal endings of particular triplets of endings occur under stated conditions (see 240, 265). Therefore, Pāṇini has not only to posit basic forms of nominal endings but also to grant separate status to endings that are homophonous. Thus, there are three separate endings *bhyām,* belonging to the third, fourth, and fifth triplets, and two endings *bhyas,* in the fourth and fifth triplets. Nothing distinguishes these from each other except that they belong to distinct triplets, which are allowed to occur under different conditions. In addition, certain homophonous endings are associated with particular operations that make it necessary to distinguish them by means of markers; see 82.

I shall be concerned here with sets of variants which cannot be described solely in terms of phonological rules, and I shall assume that decisions regarding phonologically conditioned variants have been reached (Section 4.2.1). For certain endings, there is no question of positing one of a group of variants as basic, since there is only one form except for phonologically determined variation. This is true of the endings *bhyām,* of *bhyas,* of the sixth- and seventh-triplet endings *os,* and the seventh-triplet ending *su* (*sup*). The following, then, remain to be considered: first- and second-triplet endings, ekavacana endings of the third through seventh triplets, and bahuvacana endings of the third and sixth triplets.

712 Let me begin with variants in the third triplet bahuvacana set. There are two endings to be considered: *bhis* and an ending contained in forms of the type *devais* 'gods'. Forms with *-ais* correspond to first-triplet ekavacana forms of the type *devas, phalam*. *-bhis* occurs elsewhere, as in *ajābhis* 'she

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goats', *agnibhis* 'fires', *vāribhis* 'waters', *matibhis* 'thoughts', *strībhis* 'women, females', *vāyubhis* 'winds', *dhenubhis* 'cows', *madhubhis* 'honeys', *vadhūbhis* 'brides', *pitṛbhis* 'fathers, ancestors', *mātṛbhis* 'mothers', and *vāgbhis* 'voices, speeches'. Clearly, *bhis* has the broader domain, hence should be treated as basic, and forms with *-ais* are to be accounted for through substitution.

Two possible replacements for the basic ending *bhis* could be considered. There is a general phonological rule whereby *ai* substitutes for *a* or *ā* and a following vowel *e* or *ai* (A 6.1.88 [529]). In terms of this rule, one could have *bhis* replaced by *es* or *ais* in order to derive *devais* from *deva-bhis*. Other considerations show that *ais* should replace *bhis*. There is a pada boundary between *bhis* and its stem (A 1.4.17 [75]), as can be seen from examples such as *chandobhis* 'meters' (see 75). Between *es* or *ais* and a stem, on the other hand, there is no pada boundary (A 1.4.18), just as the ending *ā* has no such boundary before it: *vācā, srajā* have *-c-, -j-* instead of *-k-, -g-*, and *chandasā* has *-s-*, not *-r-*. In *deva-es* or *deva-ais,* then, pada-interior *-a-* is contiguous to pada-interior *es, ais*. There is a particular rule (A 6.1.97 [531]) whereby *-a-* and a following guṇa vowel are both replaced by the latter, as in *pace* 'I am cooking (for myself)', derived from *pac-a-e* (see 730). Once this rule is adopted, one cannot derive *devais* from *deva-es,* since the general rule that would give *-ai-* as a single replacement for *-a-* and *-e-* following it is blocked by the exception noted. Therefore, *bhis* must be replaced by *ais* (see A 7.1.9 [492]).

713 Items with ekavacana endings of the third triplet are of three kinds. Pairs such as *vācā*: *vāgbhis, srajā*: *sragbhis* allow one to abstract an ending *ā* (see 668). This occurs not only with consonantal stems but also with stems that have final vowels before consonant-initial endings; e.g., *patyā*: *patibhis* 'husband, master', *matyā*: *matibhis, sakhyā*: *sakhibhis* 'friend', *dhenvā* : *dhenubhis, vadhvā* : *vadhūbhis, pitrā* : *pitṛbhis, mātrā* : *mātṛbhis*. Plural forms in *-ibhis, -ubhis* from non-feminine

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stems correspond to forms with *-inā, -unā* of the types *agninā, vāriṇā, vāyunā, madhunā*. This holds only in general, however, as can be seen from *patyā*. Finally, a singular type *devena* corresponds to a form of the type *devais*. Here again there is one ending with a broader domain than any other: *ā*. This is properly considered the basic ekavacana ending of the third triplet.

After a subset of stems in *-i, -u,* this ending is replaced by *nā* (see A 7.3.120 [497]). Given that *a* and a vowel *i* following it are regularly replaced by the single vowel *e,* as provided for in A 6.1.87 (528), the type *devena* is accounted for by having *ina* substitute for *ā* after a stem in *-a* (A 7.1.12 [492]).

714 Items with bahuvacana endings of the sixth triplet also are of three kinds. In general, consonant-final bases are followed by *ām,* as in *vācām, srajām, chandasām*. *ām* also occurs with nominals that have *-ī -ū -o -au* before consonants and *-iy -uv -av -āv* before vowels: *dhiyām* : *dhībhis* 'thoughts', *bhruvām* : *bhrūbhis* 'brows', *gavām* : *gobhis* 'cows, oxen', *nāvām* : *naubhis* 'boats'. In addition to forms of the type *dhiyām, bhruvām,* however, there are also *dhīnām, bhrūṇām,* with *-nām,* which alone occurs after *strī-* 'female, woman' (*striṇām*). As in these examples, *-nām* generally follows vowels: *devānām, trayāṇām* 'three' (masc.-nt.), *phalānām, ajānām, agnīnām, matīnām, vārīṇām, devīnām, vāyūnām, dhenūnām, madhūnām, vadhūnām, pitṝṇām, mātṝṇām, tisṛṇām* 'three' (fem.), *catasṛṇām* 'four' (fem.). In forms of certain number words, however, *-nām* follows consonants: *caturṇām* 'four', *ṣaṇṇām* 'six'. Finally, pronominal stems have *-sām* in forms of the type *sarvāsām* (fem.), *sarveṣām* (masc.-nt.) 'all', corresponding to nominative singular *sarvā, sarvas, sarvam*.

The distribution of *ām, nām,* and *sām* is patently more complex that that of other variants considered so far. Just as clearly, nevertheless, *sām* should not be treated as the basic ending in this group, since its domain is so restricted, so that the choice is between *ām* and *nām*. Now, just as a consonant-initial ending like *bhis* follows a pada, so does *nām* have a

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pada boundary between it and its stem, but *ām* does not. Thus, one has *ṣaṇṇām* (A 8.2.39, 8.4.41-42, 45 [546, 574, 575]) instead of **ṣaṣṇām* and *vācām* instead of **vāgām*. Suppose that *nām* were posited as the basic bahuvacana ending in the sixth triplet, so that *ām* and *sām* would be accounted for by deleting the *n* of *nām* and having *s* replace it. The reason for this procedure would be to let a stem preceding *nām* belong to the pada class, so that its final consonant would undergo pada-final substitutions. The fact is, however, that *nām* is required for this only in a restricted number of instances. First, as part of the derivation of *ṣaṇṇām*, the *-ṣ* of *ṣaṣ-* is replaced by *-ḍ* before *-nām*. In addition, there is the type *pañcānām* (see 468 [A 6.4.7]), in which *-n* of the stem *pañcan-* is deleted. After other consonant-final bases, however, the *n* of *nām* would itself have to be deleted, with consequent elimination of the pada-boundary: *rājabhyām, rājabhis, rājabhyas, rājasu* and *pañcabhyām, pañcabhis, pañcabhyas, pañcasu* are alike, but the form corresponding to *pañcānām* is *rājñām* (A 6.4.134, 8.4.40 [502, 574]) not **rājānām* or **rājanām*. In brief, with the exception of a subset of number words, forms of consonant-final stems with a bahuvacana ending of the sixth triplet require that this ending not follow a pada. Therefore, it is preferable to treat *ām* as the basic ending. The variants *nām* and *sām* are then to be accounted for by introducing the initial augments *n* and *s* to *ām* (A 7.1.52, 54-55 [498]). In this way, one has *-nām*, before which *-n* of a pada is deleted and *-ḍ* substitutes for pada-final *-ṣ*, as well as *-sām*, before which stem-final *-a* is replaced by *-e*, just as *-e* substitutes for *-a* before *su* (see A 7.3.103 [482])

715 Ekavacana endings of the fourth, fifth, and sixth triplets are best considered together. The fourth-triplet ending with the broadest domain is *e*:

(241) *agnaye patye mataye vāriṇe dhiye vāyave dhenave madhune bhruve pitre mātre gave rāye* 'wealth' *nāve vāce*

Feminine stems with bahuvacana forms in *-ibhyas, -ibhyas,*

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-ubhyas, ūbhyas have corresponding singular forms with *-ai*:

(242) *matyai devyai striyai dhiyai dhenvai vadhvai bhruvai*

As can be seen, some forms of type (242) alternate with forms of type (241). To non-pronominal feminine plural forms in *-ābhyas* correspond singular forms in *-āyai*:

(243) *ajāyai*

The pronominal equivalent is of the type

(244) *sarvasyai*

There is a comparable distinction betwen pronominal and non-pronominal forms to which correspond bahuvacana forms in *-ebhyas*:

(245) *devāya phalāya*

(246) *sarvasmai*

In the fifth triplet, there is an ekavacana ending *as*:

(247) *vāriṇas dhiyas madhunas bhruvas rāyas nāvas vācas*

Singular forms with *-es, -os, -os* correspond to non-neuter plural forms in *-ibhyas, -ubhyas, -obhyas*:

(248) *agnes mates vāyos dhenos gos*

In addition, feminine nominals with plural forms in *-ibhyas, -ībhyas, ubhyas, ūbhyas* have corresponding singular forms with *-ās*:

(249) *matyās devyās striyās dhiyās dhenvās vadhvās bhruvās*

As can be seen, forms of the types (241) and (242) are paralleled by forms of the types (248) and (249).

Corresponding to (243)-(246), there are fifth-triplet forms of the types:

(250) *ajāyās* (251) *sarvasyās* (252) *devāt phalāt*

(253) *sarvasmāt*

Apart from all the above, there are fifth- and sixth-triplet forms in *-us*:

(254) *patyus sakhyus pitus mātus*

Sixth-triplet singular forms are identical to fifth-triplet forms with one exception. To bahuvacana forms in *-ebhyas* correspond ekavacana forms with an ending *-sya*:

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(255) *devasya sarvasya phalasya*

Now, note that fourth-triplet forms corresponding to (247)-(248) are included in the single set (241). In addition, recall that there is a general phonological rule whereby pada-final *e* or *o* and short *a* following either of these are together replaced by *e* and *o* (A 6.1.109 [533]). A parallel rule makes it possible to eliminate (248) as a totally independent type: Let forms of this kind be derived with an ending *as*, the vowel of which is preceded by stem-final *-e* and *-o*, which are then the single replacements for *-e-a-* and *-o-a-* (A 6.1.110). Once this is done, one has two parallel sets of endings: *e ai yai syai*, as in (241)-(244), in the fourth triplet and *as ās yās syās*, as in (247)-(251), in the fifth and sixth triplets.

The first ending of each of these sets has the broadest domain, so that the immediate candidates for basic ekavacana endings of the fourth, fifth, and sixth triplets are *e, as*, and *as*. Moreover, there are again phonological rules that can be brought into play. A vowel *a* or *ā* and a following *e* are both replaced by *ai* (A 6.1.88 [529]), so that *ai, yai, syai* might be accounted for by introducing initial augments *a, ya, sya* or *ā, yā, syā* to the basic ending *e* after specified bases. Since, however, there is another rule, whereby short *a* and a following guṇa vowel are both replaced by the latter in the interior of a pada (see 712), it is clear that the augments should be *ā, yā, syā*, which Pāṇini provides for (A 7.3.112-114, 6.1.88, 90 [499, 529]). Accordingly, *ās, yās*, and *syās* of the fifth and sixth triplets are derived by adding the same augments to the basic endings *as*.

The types (245)-(246) and (252)-(253) must, of course, be accounted for differently. Since the variants found here are restricted to quite specific domains, they are to be derived through operations on forms containing the basic endings *e* and *as*: After a stem in *-a*, the endings *e* and *as*, respectively, are replaced by *ya* and *āt* unless the stem is pronominal, in which case the replacements are *smai* and *smāt* (A 7.1.13-15 [492]). Similarly, the sixth-triplet ending *as* is replaced by *sya* to

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account for the type (255). Forms of the type (254) stand completely apart and have to be derived by special rules (see A 6.1.111-112 [534]).

716 Forms with ekavacana endings of the seventh triplet have *-i, -e, -smin, -ām, -yām, -syām,* and *-au*:

(256) *vāriṇi dhiyi madhuni bhruvi pitari mātari gavi rāyi nāvi vāci*

(257) *deve phale*

(258) *sarvasmin*

(259) *matyām devyām striyām dhiyām dhenvām vadhvām bhruvām*

(260) *ajāyām*

(261) *sarvasyām*

(262) *agnau patyau matau vāyau dhenau*

Of these, *-i* has the broadest domain. It is overtly found in forms of the type (256), and *-e* of the type (257) is immediately explainable starting with *-i* following *-a* of the stem: *e* substitutes for both these vowels by a general phonological rule (A 6.1.87 [528]). Therefore, *i* may be posited as the basic ekavacana ending of the seventh triplet. The pronominal type (258) is then derived by substituting *smin* for *i*, just as *smai* and *smāt* replace *e* and *as* (see 715). Note also that the types (259)-(261), with *-ām, -yām,* and *-syām,* correspond to the types (242)-(244) and (249)-(251), with *-ai, -yai, -syai* and *-ās, -yās, -syās*. This parallelism can be accounted for most directly by letting the initial augments *ā, yā,* and *syā* be added not only to *e* and *as* but also to a seventh-triplet ending *ām,* which substitutes for *i* (A 7.3.116-117 [497]). This leaves the type (262), for which special rules are required (see A 7.3.118-119).

717 There are three overt ekavacana endings of the first triplet. First, *s* occurs following vowels of non-neuter stems, except for stems in *-ī* that are derived with feminine affixes:

(263) *devas sarvas agnis patis matis dhīs vāyus dhenus vadhūs bhrūs gaus rās naus*

In addition, there are neuter forms with other endings, found

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in the types

(264) *phalam sarvam* (265) *anyat* 'other'

Other corresponding forms lack an overt ending:

(266) *ajā sarvā vāri devī strī madhu vāk payas sarpis dhanus*

Of the overt endings, *s* clearly has the largest domain, so that this is to be posited as the basic ekavacana ending of the first triplet. Forms such as those in (266) are then to be derived by deleting this ending (A 6.1.68, 7.1.23 [404, 467, 495]). Vocative forms, such as

(267) *deva aje amba agne vāyo pitar matar*

also are accounted for by deleting *s* (A 6.1.68-69 [467]). Forms of the types (264)-(265) could now be derived in one of two ways: The basic ending *s* is replaced by *am, ad;* alternatively, *m* and *d* substitute for *s*. The choice between these alternatives depends on other considerations (see 725).

718 Let us first take up dvivacana endings of the first and second triplets, which are always homophonous. There are, to begin with, non-neuter forms in *-au*:

(268) *devau sarvau devyau striyau dhiyau vadhvau bhruvau pitarau mātarau svasārau kartārau gāvau rāyau nāvau*

The type *devau* is immediately derivable from *deva-au,* with the application of a general phonological rule (A 6.1.88 [529]), so that all the forms in (268) can be treated as containing an ending *au.* In addition, there is an ending *ī,* found in neuter forms:

(269) *vāriṇī asthinī* 'bones' *madhunī prācī* 'directed to the front, facing east', *nāmnī / nāmanī* 'names' *balinī* 'strong' *chandasī balīyasī* 'quite strong, stronger' *haviṣī* 'oblations' *dhanuṣī*

Neuter forms of the type *phale* and femines of the type *aje,* then, can be derived from *phala-ī* and *ajā-ī,* by a general phonological rule (A 6.1.87 [528]). Finally, there are masculine and femine forms like

(270) *agnī matī vāyū dhenū*

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Clearly, *au* has the single largest domain. It should, therefore, be considered the basic dvivacana ending of the first and second triplets, replaced by *ī* in particular contexts (see A 7.1.18-19 [493]). There remains to consider the types in (270). Forms with *-ī* could be derived by letting *ī* replace *au* and having a general phonological rule apply to replace *-i-ī* with the single long vowel *-ī* (A 6.1.101 [532]), but this will obviously not do for *vāyū, dhenū*. Nevertheless, all these should indeed be treated in a like manner, given that they all show long vowels corresponding to short vowels of stems before endings such as *bhyām, bhis*. Starting with basic dvivacana endings *au* in the first and second triplets, then, such forms could be described by means of either of two rules:

A. *-i* or *-u* of non-neuter stems and the endings *au* are both replaced by the long vowel corresponding to the former: *agni-au* > *agnī, vāyu-au* > *vāyū*.

B. The endings *au* are deleted after non-neuter stems in *-i -u*, and the stems vowels are then replaced by long ones: *agni-au* > *agni* > *agnī, vāyu-au* > *vāyu* > *vāyū*.

A is demonstrably preferable to B. Consider the following:

(271) परि यदिन्द्र रोदसी उभे अबुभोजीर्महिना ... (*pári yád indra ródasī ubhé ábubhojīr mahinā* [RV 1.33. 9ab]) 'When, Indra, you encompassed both worlds with might ...'

(272) इन्द्रवायू इमे सुताः (*índravāyū imé sutāḥ* [RV 1.2. 4a]) 'Indra and Vāyu, here are the Soma juices pressed (for you).'

(273) इन्द्रश्च यद्युयुधाते अहिश्च (*índraś ca yád yuyudhāte áhiś ca* [RV 1.32.13c]) 'When Indra and the serpent fought ...'

There is a phonological rule of semivowel substitution and another rule, whereby pada-final *-e* and a following vowel *a-* are both replaced by the former (A 6.1.77, 109 [125, 533]), but neither of these operations applies to segments in (271)-(273):

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*... *rodasy ubhé 'bubhojīr...*, * *indravāyv ime...*, *... *yuyudhāté 'hiś ca* are inadmissible. Patently, both nominal and verbal dual forms with *-ī, -ū,* and *-e* constitute special exceptions with respect to phonological operations. Let us, with Pāṇini, speak of pragṛhya elements, which fail to undergo replacements before vowels (A 6.1.125 [535]). Let us also consider the way to characterize members of the pragṛhya class. There are three formulations seriously to be considered:

C. Dvivacana endings that terminate in *-ī, -ū, -e* are pragṛhya.

D. Dvivacana endings *-ī, -ū, -e* are pragṛhya.

E. Items that end with *-ī, -ū, -e* and contain dvivacana endings are pragṛhya.

D will not do, since under this formulation *yuyudhāte* of (273) would not contain a pragṛhya element: *āte* is the dvivacana ending in this form, not *e* alone. In connection with E, consider also the following:

(274) a. *kumāryagāram* b. *kumāryor agāram* 'the house of the two girls.'

(274a,b) are alternative expressions: (274b) is a string equivalent to (274a). The two should therefore be related systematically. This can be done by letting them both derive from a single string

(275) *kumārī-os agāra-s*

consisting of two related padas: *kumārī-os,* with the dvivacana ending *os* of the sixth triplet, and *agāra-s,* with the ekavacana ending *s* of the first triplet. Operations can apply whereby the string (274b) is derived from (275) or, alternatively, the padas of (275) can be combined to form a tatpuruṣa compound of the type *rājapuruṣa* (see 301). The nominal endings included within the compound are then deleted. The *-ī* of *kumārī* in *kumārī-agāra* should now be subject to semivowel replacement, giving *kumāryagāra.* Recall now that, after the ending *as* of *rājan-as* has been deleted in the compound *rājan-as-puruṣa-s*, the remaining item *rājan-* is still classed as a pada (A 1.4.14, 1.1.62 [49, 103]), so that its *-n* is dropped

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(A 8.2.7 [539]. By the same convention that allows *rājan-* to be treated as a pada, the component *kumārī-* of *kumāri-agāra-* also is a pada, as though it still contained the dvivacana ending *os*. This component also ends with *-ī*. In terms of E, then, we have here a pragṛhya element. Consequently, the *-ī* of *kumārī-* would now be exempted from semivowel substitution, although the operation should indeed apply. Therefore, E is to be rejected. Now, if B were adopted to account for forms of the types in (270), one would have to accept E also. In deriving *agnī* from *agni-au*, for example, one now drops the dvivacana ending. Only if, by E, items that end in *-ī* and *-ū* are pragṛhya, can *agnī* be a pragṛhya element. Since E is unacceptable, then, B also must be rejected. This leaves us with A and C (cf. A 6.1.102,1.1.11 [532, 76]).

719 Two questions remain. First, how can the ending *ī* of *nāmnī* and so on be a dvivacana ending that terminates in *ī* if it consists simply of *ī* ? Second, how can the *-ī, -ū* of forms like *agnī* and *vāyū*, gotten by applying A (718), conform to C? These questions are resolved through conventions that are required by facts independent of those under consideration. Recall that there is a rule whereby the initial augment *iṭ* is added to an ārdhadhātuka affix which begins with a consonant other than *y* and other rules that disallow this augment after particular verbs (see 144-153). The affixes *tum, sya* are polyphonic and begin with consonants other than *y*. The affix which immediately follows the verbs in *dā-s-at, mand-iṣ-at* (A 3.1.34 [236]), however, is simply *s*. Yet, just as one has *tum, itum* and *sya, iṣya*, one has also *s, iṣ*. The rules which apply relative to augmenting with *iṭ* should apply also to account for *s* and *iṣ*. This is possible if, by convention, what is said to apply to an element beginning with a given sound applies also to an element that consists of that sound alone. Similarly, *devābhyām* (< *deva-bhyām*) is accounted for by providing that the final vowel of a stem in *-a* is replaced by the long vowel *-ā* before certain endings (A 7.3.102 [482]). The form *ābhyām* (< *a-bhyām* < ... *idam-bhyām*) should be derived in a similar

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manner, although the stem in *a-bhyām* consists merely of *a-*. This is possible if, by convention, what is said to apply to an element ending in a given sound applies also to an element consisting of that sound alone. Pāṇini adopts such conventions (A 1.1.21 [99]). Hence, a rule which provides that dvivacana endings that terminate with *ī, ū, e* belong to the pragṛhya class also provides, by convention, that endings which consist solely of *ī* and *ū* belong to this class. Recall too that a convention is established whereby a vowel V_3 which is the single replacement for contiguous vowels V_1 and V_2 is treated as the final segement of the item which ends in V_1 and the initial segment of the item which begins with V_2 (A 6.1.85 [110]). Thereby, the *-ū* of *kurū* (< *kuru-ū*: A 4.1.66 [271]) is treated as the final vowel of a nominal base (*kuru*), so that it is eligible to take nominal endings. Similarly, the vowel *-au* of *devau* is treated as the initial sound of a nominal ending, so that *devau* is a pada. In the same manner, the *-ī* of *agnī* and the *-ū* of *vāyū* are treated as the initial sounds of endings, so that *agnī* and *vāyū* can indeed be considered to contain endings. By the convention mentioned above, moreover, these endings are said to end in *ī* and *ū*.

In sum, first- and second-triplet dual forms are best accounted for by positing basic endings *au*, and forms of the types in (270) (718) are best derived by having stem-final *-i, -u* and the endings *au* both be replaced by *ī* and *ū* (A 6.1.102 [532]).

720 This established, let us turn to bahuvacana endings of the first triplet. There is a fairly large variety of forms. First, there are non-neuter forms with a clearly segmentable ending *-as*:

(276) *agnayas patayas sakhāyas trayas matayas devyas striyas dhiyas vāyavas dhenavas vadhvas bhruvas pitaras mātaras svasāras kartāras tisras catasras gāvas rāyas nāvas vācas*

The feminine types

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(277) *ajās ambās sarvās*

also can be accounted for on the basis of *ajā-as* and so on (see below). Neuter forms have *-i*:

(278) *phalāni sarvāṇi anyāni vāriṇi triṇi asthini*
madhūni namāni balīni catvāri chandāṁsi
baliyāṁsi havīṁṣi dhanūṁṣi

A group of number words has corresponding forms with no overt ending, as in

(279) *pañca ṣaṭ sapta nava daśa*

and one number word has *-au*: *aṣṭau* 'eight'. Finally, there is the pronominal type *sarve* (nom. pl. masc.)

Once more, there is an ending whose domain is broader than that of any other: *as*. This should consequently be considered the basic bahuvacana ending of the first triplet. The masculine type *sarve* and forms of the types in (278)-(279), as well as *aṣṭau*, are then accounted for through replacing *as* (see A 7.1.17, 20-22 [492-494]). Feminine forms like *ajās* can easily be derived from *ajā-as*, with the application of a general phonological rule whereby the contiguous homogeneous vowels *-ā-a-* are both replaced by a single long vowel (A 6.1.101[532]). This general rule cannot serve to derive *devās* from *deva-as*, however, since it has an exception (A 6.1.97 [531]), whereby pada-interior *a* and a following guṇa vowel are both replaced by the latter alone; this would allow *devas* as a plural form instead of *devās*. A way is open, nevertheless, to derive *devās* from *deva-as*. As has been shown (718-719), forms like *agnī, vāyū* are best derived by means of a rule which serves to replace stem-final *-i* and *-u* and *au* of the dvivacana endings with single long vowels homogeneous with the first, *-ī* and *-ū*. This rule can be modified to allow base-final *-a* and the vowel of *-as* also be be replaced by a single long vowel homogeneous with the first.

721 Now, the rule A (718) as formulated is not sufficient to account for certain archaic forms of the type *devī*, equivalent to *devyau*. To account for *devī* on the basis of *devī-au*, then, one should also allow stem-final *-ī* and the endings *au*

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following it to be replaced, optionally, by *ī* alone. Moreover, there are, again in Vedic, nominative plural forms of the type *mārutīs* 'dedicated to the Maruts'. To account for such forms in addition to the type *devyas*, one can allow *-ī* of a stem and the *a-* of the ending *as* that follows optionally to be replaced by the first vowel alone. In the same manner, it is possible to have *-a* of a stem and *a-* of the ending *as* both be replaced by *ā* to derive *devās* from *deva-as*. Both derivations would now involve replacing *a-* of *as* and a preceding stem vowel with a single long vowel homogeneous with the latter. Let us, therefore, consider modifying **A** to include such replacements.

A could also be modified to account for certain forms with a bahuvacana ending of the second triplet. As in the first triplet (see **720**), here also there is an ending *as*:

(280) *striyas dhiyas bhruvas tisras catasras rāyas nāvas vācas*

In addition, there are forms in *-īs, -ūs*:

(281) *matīs devīs strīs dhenūs vadhūs*

These can now be accounted for by letting *-i -ī -u -ū* of stems and *a-* of the ending *as* both be replaced by a long vowel homogeneous with the first. The same kind of substitution will account also for *-ās* in *ajās, ambās, sarvās* and *-ṛs* in *mātṛs, svasṛs*.

722 The modified version of **A** has, in effect, to be a series of related rules:

F. *-a -ā -i -ī -u -ū -ṛ* together with initial vowels of endings of the first two triplets following these stem vowels are replaced by a single vowel, one that is long and homogeneous with the first of the two contiguous vowels (see **A** 6.1.102 [**532**]); e.g., *deva-as* > *devās, ajā-as* > *ajās, agni-au* > *agnī, vāyu-au* > *vāyū, mati-as* (second-triplet ending *śas*) > *matīs, devī-as* > *devīs, dhenu-as* > *dhenūs, vadhū-as* > *vadhūs, mātṛ-as* > *mātṛs*.

G. Exception: **F** does not apply where an *a-* vowel is followed by a vowel other than *a* (**A** 6.1.104); e.g., *deva-au* > *devau*. Since single-vowel substitution by **F** is disallowed, a

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general phonological rule (A 6.1.88 [529]) applies to replace both *-a-* and *-au* which follows with *-au*.

H. Exception: F does not apply where a long vowel is followed by a vowel other than *a* and also by the *a-* of the first-triplet ending *as* (A 6.1.105); e.g., *devī-au* > *devyau, devī-as* > *devyas, vadhū-au* > *vadhvau, vadhū-as* > *vadhvas*. Since F is not allowed to apply, semivowel replacement takes effect (A 6.1.77 [125]).

I. Option: Under the conditions given in G–H, the more general rule F is only optionally disallowed with respect to Vedic usage (A 6.1.106). E.g., *devī-au* > *devī / devyau, mārutī-as* > *mārutīs / mārutyas*.

With the addition of one rule, moreover, forms of the types

(282) *devān sarvān agnīn patīn sakhīn trīn vāyūn pitṛn kartṛn*

are accounted for:

J. The *-s* of the second-triplet ending with a long vowel gotten by F is replaced by *-n* in the masculine (A 6.1.103).

Some forms require still other rules. Thus, what F provides for should not apply if *dhiyau, dhiyas, bhruvau, bhruvas* are to be derived from *dhī-au, dhī-as, bhrū-au, bhrū-as*. Instead, *-ī* and *-ū* are replaced by *-iy* and *-uv* (A 6.4.77 [452]). The alternants *strīs / striyas* also call for a particular statement: The *-ī* of *strī-* is replaced by *-iy* before vowels of endings, optionally before the second-triplet ending *as* (A 6.4.79–80 [500]). Further, in order to derive *tisras* and *catasras* instead of **tisṛs* and **catasṛs*, one must provide that the *-ṛ* of the stems *tisṛ-* and *catasṛ-* is replaced by *-r* before a vowel (A 7.2.100 [475]). Finally, another special rule serves to replace the *-o* of a stem and the *a-* of the second-triplet ending *as* with the single vowel *-ā-* (A 6.1.93 [530]), thus accounting for forms like *gās* 'cows'.

723 Although the forms to be described are obviously complex, one might think that the rules referred to in 722 are themselves so complicated that other possibilities should be

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entertained. Consider the following possibility. Suppose one posited s_1 and s_2 as the basic bahuvacana ending of the first and second triplets. Forms of the types given in (276), (280) (720-721) could now be accounted for by providing that s_1 is augmented with initial *a*. In view of forms like *mārutīs*, this augmenting would be made optional for Vedic usage. Since the type *devās* cannot be derived from *deva-as* by a general phonological rule, one would now have to say also that *-a* of a stem is replaced by *-ā* before s_1. To account for the types in (281), one would also let this long-vowel substitution apply to vowels other than *a*. Further, the types in (282) (722) would now be derived by substituting *n* for s_2 after long vowels of masculine forms gotten by such replacement. In sum, there is as much complexity in the alternative under consideration as in the set of rules dealt with earlier. Note, moreover, that a rule such as F is required for forms of the types in (270) (718). In addition, dialectal variants such as *devī / devyau, mārutīs / mārutyas* are comparable, so that it is reasonable to account for variant dual and plural forms of these kinds in the same manner. This can be done with the rules referred to earlier. It is thus preferable to posit basic bahuvacana endings *as* for the first and second triplets. These are distinguished from each other by means of markers: *jas* and *śas*.

724 Consider now ekavacana endings of the second triplet. An ending *am* appears in forms of the types

(283) *sakhāyam striyam dhiyam bhruyam pitaram*
mātaram svasāram kartāram rāyam nāvam vācam

There are also forms with *-m* following a stem vowel:

(284) *devam sarvam ajām ambām sarvām agnim patim*
matim devīm strīm vāyum dhenum vadhūm

Neuter forms are homophonous with first-triplet forms, of the types shown in (264)-(265) (717). Now, as can be seen, *striyam* and *strim* are alternants, just as *striyas* and *strīs* alternate (722). In addition, *am* clearly has a broader domain than any other ekavacana ending of the second triplet. Hence,

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it is proper to posit *am* as the basic ending and to have rules comparable to those which account for forms like *agnim, strīs* serve also to derive forms of the types in (284); see the references given in 722. Moreover, as was the case for certain forms with *śas*, so here also special rules are required: *-i, -ū* of *dhī-, bhrū-* are replaced by *-iy, -uv* before vowel-initial endings; the *-ī* of *strī-* is optionally replaced by *-iy* before *am*, just as it is before *śas*; and *-ā-* replaces both stem-final *-o* and the *a-* of *am*, as in *gām*.

725 Let us return now to neuter forms with ekavacana endings of the first two triplets. From what has been shown, it follows that the basic endings are *s* and *am*. Since the forms in question are homophonous, moreover, both endings undergo the same operations, as follows:

K. *s* and *am* are replaced by zero after neuter stems (see A 7.1.23 [495]); e.g., *vāri-s* > *vāri*, *vāri-am* > *vāri*, *madhu-s* > *madhu*, *madhu-am* > *madhu*, *nāman-s / am* > *nāman* > *nāma* (A 8.2.7 [539]), *balin-s / am* > *balin* > *bali*, *chandas-s / am* > *chandas*, *sarpis-s / am* > *sarpis*, *dhanus-s / am* > *dhanus*.

L. Exception: *am* substitutes for *s* and *am* after a stem in *-a* (A 7.1.24). E.g., *phala-s* > *phala-am* > *phalam* (A 6.1.107 [533]), *phala-am* > *phala-am* > *phalam*.

The type *anyat* requires still another rule. As I remarked earlier (717), this type could be considered to contain an ending *d* or *ad*. Suppose that *s* and *am* were replaced by *d*. This would account for *anyad* (> *anyat*) corresponding to forms like *devas*. However, one could not now derive *anyat* corresponding to *deva* (voc. sg.), which is gotten from *deva-s* by deleting the sambuddhi ending *s* after a stem in *-a*. Under the alternative being considered, *d* in *anya-d* from *anya-s* would be a replacement for the sambuddhi ending *s*. By the metarule according to which a replacement is treated like its substituend (A 1.1.56 [100]), then, *d* also would be a sambuddhi ending. Hence it would be subject to deletion, so that one could not derive a vocative *anyat*. Consequently, one must consider substituting *ad* for *s* and *am*. Now, in *anya-ad* from *anya-am*,

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the replacement is treated like its substituend, so that one could let the *-a* of *anya-* substitute for both contiguous vowels. However, there remains a problem connected with *anya-ad* in which *ad* has replaced *s*. For now F (722) would apply here to give **anyād* instead of the required form. Hence, a different procedure must be adopted. Let *s* and *am* be replaced by *ad* which conditions a particular operation: That part of a stem which begins with its last vowel is deleted before this ending: *anya-ad* > *anyad*. In *any-ad* thus gotten, there is no sequence of vowels subject to replacement, and *ad* which replaces the sambuddhi ending *s* follows a consonant, so that it is not subject to deletion. Pāṇini follows this procedure, by marking the substitute *ad* with *ḍ* (see A 7.1.25 [495]).

726 There are thus good reasons in Pāṇini's system not only for positing basic nominal endings but also for positing the particular basic endings in question (see 67 with Figure B).

4.2.3. Basic verb endings.

4.2.3.0. Introduction.

727 Positing basic verb endings involves more complexities than are connected with nominal endings. Arriving at basic verb endings involves a series of abstractions, and this has to do with the semantics with which these endings are associated. For verb endings signify not only kārakas and numbers connected with these, as do nominal endings, but also have to do with time references and modalities. Therefore, it will be best to consider these endings in steps, beginning with endings found in different tense and modal forms.

4.2.3.1. Endings in different tense and modal forms.

728 Present indicative forms show the following endings: prathama: *ti* (ekavacana) *tas* (dvivacana) *anti, ati* (bahu-

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vacana), madhyama: *si thas tha,* uttama: *mi vas mas.* These are obvious in the types:

(285) *atti attas adanti, atsi atthas attha, admi advas admas* 'eat'

(286) *sunoti sunutas sunvanti, sunoṣi sunuthas sunutha, sunomi sunuvas/ sunvas sunumas/ sunmas* 'press juice out of something'

(287) *juhoti juhutas juhvati, juhoṣi juhuthas juhutha, juhomi juhuvas juhumas* 'offer oblations'

In addition, *-ddh-* is the regular phonological outcome of *-dht-* and *-dhth-* (see A 8.2.40 [547]), so that *ruṇaddhi* 'holds in, besieges', *runddhas, runddhas,* and *runddha* are properly treated as containing the endings *ti tas thas tha.* Forms of the type *bhavati* 'is, becomes', *bhavatas* clearly have a stem in *-a* (*bhava-*) followed by the endings *ti* and *tas.* In parallel fashion, then, *bhavanti* should be treated as consisting of the stem *bhava-* and the ending *anti.* A particular substitution rule (A 6.1.97 [531]) allows for deriving *bhavanti* from *bhava-anti.* The types *tudanti* 'shove, goad, wound', *dīvyanti* 'gamble', *corayanti* 'steal' are derived similarly, from *tuda-anti, divya-anti* (> ... *dīvyanti*), and *coraya-anti.* The distribution of the bahuvacana endings *anti, ati* is thus: *ati* with stems that have undergone doubling, *anti* elsewhere.

729 The sets

(288) *roditi ruditas rudanti, rodiṣi ruditha ruditha, rodimi rudivas rudimas* 'cry, weep'

(289) *svapiti svapitas svapanti, svapiṣi svapithas svapitha, svapimi svapivas svapimas* 'sleep, dream'

(290) *bravīti brūtas bruvanti, bravīṣi brūthas brūtha, bravīmi brūvas brūmas* 'say, speak'

contain forms with *anti,* but *svapiti, roditi, svapitas, ruditas,* and so on have *-iti, -itas* and so on following the verbs; and *bravīti, bravīṣi, bravīmi* have *-īti, -īṣi, -īmi* after the verb. These particular endings are restricted to particular verbs, so that they are best treated as derived from basic *ti, tas* and so on through augmenting (A 7.2.76, 7.3.93 [440]).

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730 Middle present forms, as in

(291) *sunute sunvāte sunvate, sunuṣe sunvāthe sunudhve, sunve sunuvahe / sunvahe sunumahe / sunmahe*

(292) *runddhe rundhāte rundhate, runtse rundhāthe runddhve, rundhe rundhvahe rundhmahe*

obviously contain the following endings: prathama: *te āte ate,* madhyama: *se āthe dhve,* uttama: *e vahe mahe.*

stuvīte, stuvīṣe, and so on, which vary with *stute, stuṣe,* etc., are to be treated in the same manner as the corresponding active forms *stavīti / stauti,* and so on: The initial augment *i-* is added optionally to the endings (A 7.3.95 [440]). *Śete* 'is lying down, sleeping', *śayāte* and *āste* 'is seated', *āsāte* contain the same endings *te* and *āte,* but *āsate* and *śerate* differ. The latter is derived in the most straighforward way by adding the augment *r-* to the ending *ate* (A 7.1.6 [510]).

As was shown in 729, forms of the type *bhavanti* should be derived from stems in *-a* followed by the ending *-anti.* Accordingly, the type *pacante* 'they are cooking (for themselves)', corresponding to *pacanti* 'they are cooking (for some one else)', is to be derived from *paca-ante,* with the variant *ante,* found only with stems in *-a.* In the same way, *pace* 'I am cooking', which corresponds to *pacate, pacase* as *sunve* corresponds to *sunute* and *sunuṣe,* should be analyzed into a stem *paca-* and an ending *e.* In both instances, pada-interior *-a-* and a following guṇa vowel are then replaced by the latter alone (A 6.1.97 [531]): *paca-ante* › *pacante, paca-e* › *pace.*

Forms of the type *pacete, pacethe* stand apart. Such forms are parts of sets with stems in *-a* only, so that considerations of domains speak for treating them as derived from forms with more basic endings *āte, āthe.* There is a general phonolgical rule whereby *a* and a following *i*-vowel are both replaced by *e* (A 6.1.87 [528]). One can take advantage of this, by providing that the endings undergo substitution that results in a sequence *-a-i-.* Obviously, the most straightforward procedure would be to let *i-* replace the initial *ā-* of the endings. Note, however, that optative forms

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of the type *paceyus, paceyātām* require *-iy-* after the stem. Accordingly, Pāṇini lets *iy* substitute for *ā-* of the endings (A 7.2.81 [443]). *y* is then dropped before the consonants *t, th* (A 6.1.66 [522]), just as the *-y-* of *paca-iyt, paca-iytām* corresponding to *paceyus* is deleted to derive *pacet, pacetām.*

731 Forms of the future type

(293) *atsyati atsyatas atsyanti, atsyasi atsyathas atsyatha, atsyāmi astsyāvas atsyāmas* 'eat'

(294) *soṣyati soṣyatas soṣyanti* ... 'press juice out of something'

(295) *soṣyate soṣyete soṣyante, soṣyase soṣyethe soṣyadhve, soṣye soṣyāvahe soṣyāmahe*

contain endings found in presents of the type *pacati, pacate.* The endings now follow a stem with an affix *-sya,* augmented *-iṣya* (A 3.1.33 [236]).

The future type

(296) *attā attārau attāras, attāsi attāsthas attāstha, attāsmi attāsvas attāsmas*

(297) *sotā sotārau sotāras, sotāsi sotāsthas sotāstha, sotāsmi sotāsvas sotāsmas*

(298) *sotā sotārau sotāras, sotāse sotāsāthe sotādhve, sotāhe sotāsvahe sotāsmahe*

have endings after a stem with the suffix *-tās* (A 3.1.33), which has a variant *-tāṅ* before *e* and one without *-s* before *s, r, dh* (A 7.4.50-52, 8.2.25 [435, 543]) Madhyama and uttama endings are the same as in the types (293)-(295), but prathama endings differ. Given this situation, forms with prathama endings are best considered to have replacements for more basic endings *ti* and so on (see A 2.4.85 [403]).

732 Imperfect active forms of the type

(299) *asunot asunutām asunvan, asunos asunutam asunuta, asunavam asunuva/ asunva asunuma/ asunma*

obviously have the following endings: prathama: *t tām an,* madhyama: *s tam ta,* uttama: *am va ma.*

In the type

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(300) *abhavat abhavatām abhavan, abhavas abhavatam abhavata, abhavam abhavāva abhavāma*

all forms except *abhavan* and *abhavam* are unambiguously divisible into an augmented stem *abhava-* or *abhavā-* and endings: *abhava-t, abhava-tām, abhava-s, abhava-tam, abhava-ta, abhavā-va, abhavā-ma*. As *bhavanti* is derived from *bhava-anti* (see 728), so also should *abhavan* be derived from a form in which *abhava-* is followed by an ending with *a-* (*-ant*: see below). Similarly, *abhavam* should be derived from *abhava-am*, and the same rule that accounts for *-ā-* in place of *-a-a-* to give *abhavam* (A 6.1.107 [533]) will apply also to derive *akrīṇām* 'bought' from *akrīnā-am*. The same phonological rule that accounts for *ruṇaddhi* (< ... *runadh-ti*), *runddhas* (< ... *rundh-tas*) and so on (see 728) accounts also for *arunddhām, arunddham, arunddha* on the basis of a stem *arundh-* followed by the endings *tām, tam, ta*. The second and third singular forms *aruṇat* are to be derived from *arunadh-s, arunadh-t*, with deletion of the endings *-s, -t* after a consonant (A 6.1.68 [404]).

There is also an ending *us*. This regularly occurs in the type *ajuhavus* 'offered oblations', but is not limited to this type alone, as can be seen from *avidus* 'knew'. Clearly, *us* and *an* cannot be collapsed by virtue of any phonological rule, so that one has to be considered a replacement of the other. Just as clearly, the domain of *us* speaks against considering this the basic bahuvacana ending of the prathama triplet under consideration. Instead, the ending which appears in *asunvan, abhavan* and so on should be considered more basic (cf. A 7.1.3, 3.4.109 [509, 402]). Now, there is a phonological rule whereby the final consonant of a pada that ends in a cluster is deleted (A 8.2.23 [542]). In addition, there is a clear pattern of correspondence between endings found in present and imperfect forms: *ti*: *t* :: *si*: *s*. According to the same pattern, *ant* should correspond to *anti* found in present forms (cf. A 7.1.3, 3.4.100 [509, 400]).

733 The imperfect forms related to (288)-(290) (729) are

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(301) *arodīt aruditām arudan, arodīs aruditam arudita, arodam arudiva arudima*

(302) *asvapīt asvapitām asvapan, asvapīs asvapitam asvapita, asvapam asvapiva asvapima*

(303) *abravīt abrūtām abruvan, abravīs abrūtam abrūta, abravam abrūva abrūma*

abravīt, abravīs show the same augment as in *bravīti, braviṣi,* and *asvapitām, aruditām* etc. also have the same augment as the corresponding present forms, but *asvapīt, asvapīs, arodīt, arodīs* contain *ī-* instead of *i-*. The augment *ī-* also is found in *āsīt, āsīs,* corresponding to *asti, asi,* from *as* 'be' (A 7.3.96, 98 [440]). In addition, *ādat, ādas* 'ate' contain endings with the augment *a-*, which appears also in dialectal forms of *rud*: *arodat, arodas* (A 7.3.99-100).

734 Imperfect middle forms like

(304) *asunuta asunvātām asunvata, asunuthās asunvāthām asunudhvam, asunvi asunuvahi / asunvahi asunumahi / asunmahi*

(305) *arunddha arundhātām arundhata, arunddhās arundhāthām arunddhvam, arundhi arundhvahi arundhmahi*

contain the following endings: prathama: *ta ātām ata,* madhyama: *thās āthām dhvam,* uttama: *i vahi mahi.*

The ending of *aśerata* obviously should be accounted for in the same manner as the ending of the corresponding present *śerate* (see 730), with the augment *r-* added to *-ata.* Similarly, the *-e-* of *apacetām, apacethām* is to be explained in the same manner as the *-e-* of the corresponding present forms *pacete, pacethe.* After stems in *-a,* one has, as in the present, an ending with *-n-*: *apacanta.* Stems in *-a* also have forms of the type *apace,* obviously to be analyzed into a stem with *-a* and an ending. Given that forms of the type *asunvi* consist of a stem and an ending *-i,* then, *apace* should be derived from *apaca-i,* with *-e* replacing *-a-i* by a general phonogical rule (A 6.1.87 [528]).

735 Conditional forms contain endings as found in imperfect

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forms of stems in *-a*, since endings here follow stems with the suffix *-sya*, augmented *-iṣya* (A 3.1.33 [236]). For example:

(306) *asoṣyat asoṣyatām asoṣyan* ...

(307) *asoṣyata asoṣyetām asoṣyanta* ...

736 From what has been shown up to now, it is proper to say that aorist forms like

(308) *abhūt abhūtām abhūvan, abhūs abhūtam abhūta, abhūvam abhūva abhūma* 'be, become'

(309) *aghasat aghasatām aghasan, aghasas aghasatam aghasata, aghasam aghasāva aghasāma* 'eat'

(310) *ahauṣīt ahauṣṭām ahauṣus, ahauṣīs ahauṣṭam ahauṣṭa, ahauṣam ahauṣva ahauṣma* 'offer oblations'

(311) *asoṣṭa asoṣātām asoṣata, asoṣṭhās asoṣāthām asoḍhvam, asoṣi asoṣvahi asoṣmahi* 'press juice out'

contain the same endings as in active imperfect forms; see 732-734.

However, *us* is more wide spread in the aorist than in the imperfect. This is the regular bahuvacana ending of sigmatic formations such as *ahauṣus*, and it appears also in aorists like *adus* 'gave', from stems in *-ā* (cf. A 3.4.109-110 [402]).

737 Active optative forms also have the bahuvacana ending *us* in the prathama triplet (cf. A 3.4.108 [401]); otherwise, one finds here also the endings seen in imperfect and aorist forms. For example:

(312) *adyāt adyātām adyus, adyās adyātam adyāta, adyām adyāva adyāma*

(313) *sunuyāt sunuyātām sunuyus* ...

(314) *bhavet bhavetām bhaveyus, bhaves bhavetam bhaveta, bhaveyam bhaveva bhavema*

738 Not only active optative forms but also corresponding precative forms (see (179)-(184) [681]) have the bahuvacana ending *us* in the prathama triplet. Otherwise, the same endings are found here as in imperfect and aorist forms, but all these endings are now preceded by certain elements. As has been shown (696), forms like *sunuyāt, tanuyāt, kriṇiyāt,*

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rundhyāt are to be treated as containing cosignifying affixes --- the suffixes *nu, u, nī* and the infix *n* --- and endings with augments. The cosignifying affixes are those found also in present and imperfect forms. Similarly, as *atti* and *juhoti* are derived by introducing *śap* and then deleting it (A 2.4.72, 75 [158]), so also are *adyāt, juhuyāt* and other optative forms of the verbs. Again, *bhavet* and so on are derived with the cosignifying affix *śap* in the same manner as the corresponding present and imperfect forms *bhavati, abhavat,* and so forth.

There is an obvious difference between forms that western grammarians traditionally label 'optative' and 'precative'. Precative forms, such as *bhūyāt, sūyāt, tudyāt, rudhyāt, tanyāt, krīyāt* obviously lack the vikaraṇas found in corresponding optative forms, such as *bhavet, sunuyāt, tudet, rundhyāt, tanuyāt, kriṇīyāt*; and *hūyāt* lacks the reduplication found in *juhuyāt*. In addition, optative forms like *adyām, adyāva, adyāma* differ from corresponding precatives such as *adyāsam, adyāsva, adyāsma* in that the latter contain an *-s-* which is absent from the former. Further, *hūyāt* shows a long base vowel, as opposed to *juhuyāt,* with a short vowel before *-yāt*. Once it is accepted that all such forms contain augmented endings, their common and distinct properties can be accounted for as follows. First, let there be two sets of homophonous endings, belonging to different classes: sārvadhātuka and ārdhadhātuka endings (A 3.4.113, 116 [63]), and let the augment *yās* be added to parasmaipada endings of both sets (A 3.4.103 [401]). The vikaraṇas *śap, śnu,* and so on (see 157) are introduced only if verbs occur with sārvadhātuka affixes. In addition, non-final *-s-* in such augmented endings as *-yāsam* is deleted if the ending belongs to the sārvadhātuka class (A 7.2.79 [442]). For example, *su-nu-yām* (< ... *su-nu-yāsam*) contains the augmented ending *yām,* without *-s-*, after the stem *su-nu-*, with the vikaraṇa *śnu*; the corresponding precative *sūyāsam* has the ending *yāsam* after a stem that lacks the vikaraṇa. Moreover, the stem vowel of *su-yāsam* is replaced by the corresponding long vowel before

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y- of the ārdhadhātuka affix *-yāsam* (A 7.4.25 [426]). Such lengthening does not apply before the *y-* of a sārvadhātuka affix; for example, the stem *sunu-* of *sunuyām* ends with a short vowel.

The precative *bhūyāsam* lacks the vikaraṇa *śap*, which is introduced if the verb occurs with the augmented sārvadhātuka ending *yāsam*, as in *bhaveyam* (< ... *bhū-a-yāsam*). Now, a general phonological rule (A 6.1.87 [528]) has *e* replace both *a* and a following *i*, so that it makes sense to derive *bhaveyam* by letting *iy-* replace *yā-* after a stem in *-a* (A 7.2.80 [442]). The same rules allow for the *-e-* of forms like *bhavet*, *bhaves*, which, however, lack the *-y-* found in *bhaveyam* and *bhaveyus* (*-yus* < *-yāus*: A 6.1.96 [531]). Another sūtra comes into play, whereby *y* is deleted before a consonant other than *y* (A 6.1.66 [522]).

The derivation of *bhaveḥ* from *bhū-a-yāss* also involves deleting non-initial *-s-* of the ending. In order to derive *bhūyās* from *bhū-yāss*, in which the ending *s* has the augment *yās-*, one cannot invoke the same rule, since the ending in question does not belong to the sārvadhātuka class. Instead, the penultimate *-s-* of this ending is deleted by another rule: *s* is dropped if it is the first consonant of a pada-final cluster (A 8.2.29 [543]). The same rule applies, twice, in deriving *bhūyāt* from *bhūyāsst*, which has not only the augment *yās* but also an additional *-s-*, for reasons to be noted in 739.

739 Consider now middle optative and precative forms, such as those of the verbs *su* 'press juice', *edh* 'thrive':

(315) *sunvīta sunvīyātām sunvīran, sunvīthās sunvīyāthām sunvīdhvam, sunvīya sunvīvahi sunvīmahi*

(316) *edheta edheyātām edheran, edhethās edheyāthām edhedhvam, edheya edhevahi edhemahi*

(317) *soṣīṣṭa soṣīyāstām soṣīran, soṣīṣṭhās soṣīyāsthām soṣīḍhvam, soṣīya soṣīvahi soṣīmahi*

(318) *edhiṣīṣṭa edhiṣīyāstām edhiṣīran, edhiṣīṣṭhās edhiṣīyāsthām edhiṣīḍhvam, edhiṣīya edhiṣīvahi*

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edhiṣīmahi

Here again, most of the endings are those found in corresponding imperfect and aorist forms, though they differ by being augmented, but there are also two distinct endings: *ran*, the bahuvacana ending of the prathama triplet, and *a*, the ekavacana ending of the uttama triplet. A set such as *sunvīya sunvīvahi sunvīmahi* could be derived with endings *a vahi mahi* to which an augment *iy-* is added. The *-y-* of *-iyvahi, -iymahi* would then be dropped by the same rule as applies in deriving *baveva, bhavema* and so on (see 738). Nevertheless, one must consider also sets such as *soṣīya soṣīvahi soṣīmahi*, which require an augment *sīy-*. Just as a distinction is made between sārvadhātuka and ārdhadhātuka endings in active optative and precative forms, then, let this distinction be made also for corresponding medio-passive forms. The initial augment *sīy-* is added to all such endings, but non-initial *-s-* is dropped in endings that belong to the sārvadhātuka class. This is not all, however. Forms such as *soṣīṣṭa, soṣīyāstām, soṣīṣṭhās* and *soṣīyāsthām* show not only initial *sīy-*, *sī-* but also an extra *s*, *ṣ* preceding *t*, *th* and *ṭ*, *ṭh*. Accordingly, it is proper to introduce an extra *s* as an augment for *t*, *th* in endings of such forms (see A 3.4.107 [401]), and to have the same augment occur with an active ending such as *t*, as in *bhū-yāsst* (see 738). Since *edh* is a seṭ base, one has *edhiṣīṣṭa* and so on, with the initial augment *iṭ* that is generally added to ārdhadhātuka endings beginning with consonants other than *y* (A 7.2.35 [145]).

740 Active imperative forms show the endings *tu, tām* and *antu* or *atu* in the prathama triplet; e.g., *astu stām santu, bhavatu bhavatām bhavantu, juhotu juhutām juhvatu*. The distribution of *antu* and *atu* is the same as that of *anti* and *ati* (see 728).

The dvivacana and bahuvacana endings of the madhyama triplet are respectively *tam* and *ta*, as in *stam sta, bhavatam bhavata, juhutam juhuta*.

There are several types of singular forms. To forms of

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the types *bhavatam bhavata, sunutam sunuta, tudatam tudata, tanutam tanuta,* in which *tam* and *ta* follow stems in *-a* or with affixal *-u* that is not preceded by a consonant cluster, correspond singular forms with no overt ending: *bhava, sunu, tuda, tanu.* To the type *muṣṇītam muṣṇīta,* in which *tam* and *ta* follow a stem with the affix *-nī-* preceded by a consonant, the corresponding singular form is of the type *muṣāṇa.* Since stems in *-a* lack an overt ending, it is simplest to treat *muṣāṇa* and so on as a subtype of this sort of imperative (cf. A 3.1.83 [405]). Consonant-final stems have an ending *dhi,* which occurs also with certain other stems, such as *juhu-* ; e.g., *addhi, rundhi, juhudhi.* Elsewhere, one has the ending *hi,* as in *yāhi* 'go, travel', *ihi* 'go', *krīṇīhi* 'buy' *āpnuhi* 'reach, obtain'. This ending also occurs augmented with initial *i*; e.g., *rudihi, svapihi.* Of the overt endings, *hi* has the broadest domain, so that it can be treated as basic with respect to *dhi* and zero (A 6.4.101, 105, 106 [455]).

First person dual and plural forms have *-āva* and *-āma* after stems. Moreover, in sets where stems have variant shapes, these endings follow stems in the form found before *tu,* not in the form found before other dvivacana and bahuvacana endings. For example, *juhavāva juhavāma, sunavāva sunavāma, ruṇadhāva ruṇadhāma, ayāva ayāma* have stems comparable to those of *juhotu* (*-hav-āva* < *-ho-āva*: A 6.1.78 [524]), *sunotu, ruṇaddhu, etu* (*ayāva* < *e-āva*). *āva* and *-āma* should not be considered to consist of *-va, -ma* preceded by an affix *ā,* for the same reasons which preclude positing affixes *-yās-* and *-sīy-* in optative forms. Hence, it is best to say that these imperative forms contain the endings *va* and *ma* to which is added the augment *ā* (A 3.4.92 [398]). In order to show that these augmented endings occur with stems that undergo guṇa replacement (*-no-* ≺ *-nu-* : A 7.3.84 [127]), moreover, in Pāṇini's system they are marked with *p* (cf. A 1.2.4 [513]). First singular forms such as *juhavāni, sunavāni, ruṇadhāni,* and *ayāni* are, then, best treated as having an ending *ni* (A 3.4.89 [398]) augmented in the same way.

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Forms of the type *jīvatāt* 'may he live', 'may you live' are equivalent to and alternate with forms containing *hi* or its replacements and *tu*. Consequently, *tāt* is to be considered an optional substitute for *hi* and *tu* (**A** 7.1.35 [441]).

741 Examples such as

(319) *sunutām sunvātām sunvalām, sunuṣva sunvāthām sunudhvam, sunavaị sunavāvahai sunavāmahai*

show the following endings in middle imperative forms: prathama: *tām ātām atām,* madhyama: *sva āthām dhva,* uttama: *ai āvahai āmahai*. In addition, stems in *-a,* which have indicative forms of the type *pacante* have corresponding imperatives of the type *pacantām*. Forms such as *pacetām, pacethām* are accounted for by the same rule that applies to derive *pacete, pacethe* (see **730**).

742 Perfect active forms have the following endings: prathama: *a atus us,* madhyama: *tha athus a,* uttama: *a va ma*. For example:

(320) *juhāva juhuvatus juhuvus, juhotha juhuvathus juhuva, juhāvaị juhava juhuviva juhuvima*

(321) *cakāra cakratus cakrus, cakartha cakrathus cakra, cakāraị cakara cakṛva cakṛma*

(322) *dideva didivatus didivus, didevitha didivathus didiva, dideva didiviva didivima*

(323) *tutoda tutudatus tutudus, tutoditha tutudathus tutuda, tutoda tutudiva tutudima*

from the verbs *hu, kṛ, div, tud*. Forms of the type *papau* 'protected', *dadau* 'gave' are the norm for bases in *-ā* only (*pātum, dātum*), so that it is proper to consider that the endings of such forms replace *a* (see **A** 7.1.34 [441]).

743 Perfect middle forms have the following endings: prathama: *e āte ire,* madhyama: *se āthe dhve,* uttama: *e vahe mahe*. For example:

(324) *suṣuve suṣuvāte suṣuvire, suṣuviṣe suṣuvāthe suṣuvidhveị suṣuviḍhve* (see **A** 8.3.79 [566]), *suṣuve suṣuvivahe suṣuvimahe*

(325) *cakre cakrāte cakrire, cakṛṣe cakrāthe cakṛḍhve*

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(see **A** 8.3.78), *cakre cakṛvahe cakṛmahe*

4.2.3.2. The set of basic verb endings.

744 It is thus possible to abstract a series of verbal endings as shown below, with traditional western labels 'present' and so on:

Active endings

Present:	*ti*	*tas*	*anti* *ati*	*si*	*tas*	*tha*	*mi*	*vas*	*mas*
Future:	*ti*	*tas*	*anti* *ati*	*si*	*tas*	*tha*	*mi*	*vas*	*mas*
Imperfect:	*t*	*tām*	*ant* *us*	*s*	*tam*	*ta*	*am*	*va*	*ma*
Conditional:	*t*	*tām*	*ant*	*s*	*tam*	*ta*	*am*	*va*	*ma*
Aorist:	*t*	*tām*	*ant* *us*	*s*	*tam*	*ta*	*am*	*va*	*ma*
Optative:	*t*	*tām*	*us*	*s*	*tam*	*ta*	*am*	*va*	*ma*
Imperative:	*tu*	*tām*	*antu* *atu*	*hi*	*tam*	*ta*	*ni*	*va*	*ma*
Perfect:	*a*	*atus*	*us*	*tha*	*athus*	*a*	*a*	*va*	*ma*

Middle endings

Present:	*te*	*āte*	*ate,* *ante*	*se*	*āthe*	*dhve*	*e*	*vahe*	*mahe*
Future:	*te*	*āte*	*ate,* *ante*	*se*	*āthe*	*dhve*	*e*	*vahe*	*mahe*
Imperfect:	*ta*	*ātām*	*ata,* *anta*	*thās*	*āthām*	*dhvam*	*i*	*vahi*	*mahi*
Conditional:	*ta*	*ātām*	*ata,* *anta*	*thās*	*āthām*	*dhvam*	*i*	*vahi*	*mahi*
Aorist:	*ta*	*ātām*	*ata,* *anta*	*thās*	*āthām*	*dhvam*	*i*	*vahi*	*mahi*

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Optative:	*a*	*ātām*	*ran*	*thā*	*āthām*	*dhvam*	*a*	*vahi*	*mahi*
Imperative	*tām*	*ātām*	*atām* *antām*	*sva*	*āthām*	*dhvam*	*ai*	*vahai*	*mahai*
Perfect:	*e*	*āte*	*ire*	*se*	*āte*	*dhve*	*e*	*vahe*	*mahe*

This array of endings is clearly susceptible to reduction. There are, for example, some obviously discernible patterns indicating that some endings can be related to others in a systematic manner. Thus: (a) *ti*: *t*: *tu* :: *anti*: *ant*: *antu* (b) *vas*: *va* :: *mas*: *ma* (c) *te*: *ta*: *tām* :: *ante*: *anta*: *antām* (d) *āte*: *ātām* :: *āthe*: *āthām* (e) *e*: *i*: *ai* :: *vahe*: *vahi*: *vahai* :: *mahe*: *mahi*: *mahai*. Now, the very analytic procedure which allows one to abstract such units associated with particular meanings (see 667-668) precludes certain extreme reductions. Suppose, for example, that, on the basis of the patterns shown in (a)-(e), one posited basic endings *t, s,* and *m,* to which other elements would be added. The endings *ti, si,* and *mi* would then be gotten by adding *i* to these, and *a* would be added to *t* and *s,* yielding *ta* and *sa,* to which in turn *i* could be added in order to arrive at *te* and *se* (< *ta-i, sa-i*). A problem immediately arises in that, parallel to the pair *s*: *si,* one has *thās*: *se,* not **sa*: *se*. Nor is there any pair **ma*: *me*; one has instead *i*: *e* and *a*: *e*. Of course, *e* can be derived from *a-i,* so that the pair *a*: *e* is at least comparable to others. And once one has embarked on such an analysis, the parallelism of *e*: *vahe*:*mahe* invites one to treat the last two also as consisting of *vaha, maha* and an element *i*. Yet the parallelism between *ti*: *t, si*: *s* and pairs of middle endings breaks down in more than one way. Not only does one not have **ma* or **sa,* one does have *i* and *thās,* and instead of **vaha,* **maha,* one finds *vahi, mahi*. Clearly, it is not possible to abstract a suffix *i* generally used and connected with a particular meaning. Not even treating such an element *i* vaguely as a "primary marker" will work in any generalized manner. Let us therefore take the endings as shown for our starting point.

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745 Let us begin by considering active endings other than the bahuvacana endings of the prathama set. In accordance with what has been noted in 744, it is reasonable to posit as basic those endings that appear in present and future forms: *ti tas, si thas tha, mi vas mas*. To arrive at endings which appear in other forms, with the exception of imperative and perfect forms, one can then let the following operations apply.

A. 1. *-i* > Ø: *ti* > *t*, *si* > *s*

2. *-s* > Ø: *vas* > *va*, *mas* > *ma*

3. *tas thas tha mi* > *tām tam ta am*, respectively

Imperative endings are gotten by the following:

B. 1. *-i* > *-u*: *ti* > *tu*

2. *si* > *hi*

3. *mi* > *ni*

4. Other endings are subject to operations given under A: *vas* > *va*, *mas* > *ma* (A.2); *tas thas tha* > *tām tam ta* (A.3)

5. Uttama endings receive the initial augment *ā*: *āni āva āma*

To obtain optative and precative endings, one can let A.1-3 apply and have the following take effect:

C. 1. The initial augment *yās* is added to endings

2. *X* > *us* (where *X* is an ending whose basic form is to be specified; see 747-748)

Endings which appear in perfect forms are for the most part distinct, so that it is simplest to have a rule substituting these endings for the basic ones:

D. *ti tas X* (see C.2), *si thas tha, mi vas mas* > *a atus us, tha athus a, a va ma*

746 Having posited *ti, tas*, and so on as basic active endings, one could, in parallel fashion, posit *te, āte*, and so forth as the basic middle endings. However, one would then have to state four different substitutions for a single sound, *e*, as follows: a. *e* > *a* (*te* > *ta*), b. *e* > *ām* (*āte* > *ātām*, *āthe* > *āthām*), c. *e* > *am* (*dhve* > *dhvam*), e. *e* > *i* (*e* > *i*, *vahe* > *vahi*, *mahe* > *mahi*). On the other hand, if one treats as basic the endings found in imperfect forms, those of present and future forms are more

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simply derived, as follows.

E. 1. That part of an ending which begins with its last vowel is replaced by *e*: *ta* > *te, ātām* > *āte, āthām* > *āthe, dhvam* > *dhve, i* > *e, vahi* > *vahe, mahi* > *mahe*

2. *thās* > *se*

Perfect endings, then, can be derived by letting E.1-2 apply together with two rules; one of which (F.1) is an exception to part of E.1:

F. 1. *ta* > *e*

2. *X* (see C.2 [745]) > *ire*

Optative endings can now be gotten by the following:

G. 1. The initial augment *sīy* is added to endings.

2. *X* > *ran*

3. *i* > *a*

To account for *tām, sva, ai, vahai,* and *mahai* of imperative forms, different strategies are possible. First, the following substitutions could apply:

H. 1. *-i* > *-ai*: *i* > *ai, vahi* > *vahai, mahi* > *mahai*

2. *-a* > *-ām*: *ta* > *tām*

3. *thās* > *sva*

Alternatively, one could let the substitutions provided for in E.1-2 take effect and then have special replacements for *-e* obtained in this manner:

I. 1. In uttama endings, *-e* > *-ai*: *e* > *ai, vahe* > *vahai, mahe* > *mahai*

2. After *s* and *v*, respectively, *va* and *am* replace *-e*: *se* > *sva, dhve* > *dhvam*

3. Elsewhere, *-e* > *-ām*: *te* > *tām, āte* > *ātām, āthe* > *āthām*.

Note that although I.1-3 all provide replacements for *e,* they cannot be reduced to a single rule in the way that E.1 can be stated instead of four separate rules.

Now, at first blush H.1-3 appears to be the preferable set of rules in that it avoids a two step derivation such as *i* > *e* > *ai, vahi* > *vahe* > *vahai.* Nevertheless, just such derivations are required in certain instances. Although subjunctive forms are

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not part of the language currently used in Pāṇini's time, they were part of Vedic usage, which Pāṇini also accounts for. And Vedic usage does have middle subjunctive forms of two types, such as *ījāmahe, ījāmahai* 'let us invoke, praise'. To account for both types, one need only let E.1 take effect and then have a substitution such as is provided for in I.1 take effect optionally (cf. A 3.4.96 [399]). Given that this is justified for such subjunctive forms, I.2-3 are also justified.

747 I have thusfar left certain endings out of consideration: *anti, ati* of present forms, *anti* of future forms, *ant* and *us* of aorists, *ant* in conditional forms, *antu* and *atu* of imperatives, and *ate, ante, ata, anta, atām, antām*. I have also left unspecified the basic ending to which apply C.2, F.2, G.2 as well as the ending replaced by *us* according to D. We have now to consider what should be posited as the basic active and middle endings in these instances.

To begin with, note that the operations stated in A-I do not depend on the occurrence of endings after particular stems. Rules providing for the proper distribution of *anti, ati,* etc., on the other hand, have to take into consideration specific stem forms. Consider first the possible basic active ending. From what has been pointed out earlier, it follows that one would select *anti* as basic, since this ending has the broadest domain. This would be the value of *X* in rules such as C.2 (745). To account for *ati* in present forms, then, one could have a rule

J. *n* > ∅ in *anti* following a doubled base

Together with B.1, this accounts also for *atu*. In order to account for *us* in imperfect and aorist forms, another rule is required:

K. *anti* > *us* after a stem with the aorist suffix *s*, after a stem gotten by doubling a base, and after *vid*

As for the middle endings, it follows from what was said earlier that *ata* should be posited as basic. F.2 and G.1 (746) would now replace this with *ire* and *ran*. E.1 and I.3 account for *ate* and *atām*. In order to obtain *anta*, then, one could have

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a rule

L. *n* is inserted before the *t* of *ata* if this ending follows a stem in *-a*

Now, there are Vedic subjunctive forms of the type *āsātai* (3sg.), corresponding to the indicative *āste*. Such forms are accounted for in a manner parallel to the one in which *ḷāmahai* is derived (see 746): The ending *te* is augmented with initial *ā* and has its final vowel replaced by *ai* (A 3.4.94, 96 [399]). The expected plural form corresponding to *āsātai* is *āsāntai*, which should be derived in the same manner: *-ai* should replace the *-e* of the ending, which should also receive the initial augment *ā*. Since *āsāntai* contains *-n-*, the ending in question should be *ante* (< *anta*), and this brings up a problem with L. In accordance with the indicative forms *āste*, *āsate*, the stem in *āsātai*, *āsāntai* is *ās*, which does not end in *-a*, so that L will not account for *ante* (< *anta*) in such subjunctives. One obvious way around this is to have an additional rule to derive subjunctive forms:

M. *n* is inserted before the *-t-* of *ata*.

Alternatively, one could start with *anta*. A rule would then apply as follows:

N. *n* > Ø in *anta* immediately following a stem unless the stem ends in *-a*.

This alternative has two advantages. First, there is now a single operation, instead of two, that accounts for the required derivates: N serves to drop *-n-* of the ending in deriving forms such as *āsate*, but this cannot apply in the derivation of *āsāntai* (< *ās-āantai*), where *-ant-* does not immediately follow *ās-*. Secondly, there is now a pair of parallel operations, provided by J and N. However, there is a serious disadvantage to this alternative. In terms of the domains of the endings under consideration, it is *ata*, not *anta*, which should be treated as basic.

748 Clearly, the main difficulty lies in the distribution of *anti*, *ati* on the one hand and *ata*, *ata* (*ate*, *ante*) on the other. There is yet another way in which to account for the data

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while reconciling the different distributions of endings with and without *-n-*. Instead of selecting as basic one of the active and middle endings found in final forms, one can posit an abstract segment in basic endings, and let this segment undergo replacements:

0. 1. *X* > *ant*

2. *X* > *at* after a doubled base

3. *X* > *at* in an ātmanepada ending, provided the ending follows a stem that does not end in *-a*

Pāṇini proceeds in this manner, by positing *jhi, jha* and having the segment *jh* be replaced by *ant* and *at* (**A** 7.1.3-5 [509]). **0.**1 is now the general rule to which **0.**2-3 are exceptions. By **0.**2, one gets *ati* in forms like *juhvati,* as opposed to *anti,* by **0.**1. This rule also applies to *jha, jhe* after stems that do not end with *-a*. Moreover, *jh* of the augmented ending *ājhai* in *ās-ājhai* does not directly follow the stem *ās-*; so that **0.**3 cannot apply; instead, **0.**1 takes effect: *ās-ājhai* > *ās-āantai* > *āsāntai* (**A** 6.1.101 [532]).

749 We now have to consider more closely **A-I** (745-746). As I have noted, these rules do not include particular stems as conditioning contexts. It is patent, nevertheless, that the operations provided for in such rules should not apply indiscriminately. One needs to distinguish in some manner where these operations are to take effect. In the foregoing discussion, I have used terms such as *present, future,* and *imperfect*. I have done this only in order to allow a preliminary presentation of the kinds of statements needed to arrive at certain endings after one has posited basic endings. Even a slightly closer scrutiny suffices to show that these rules as stated involve difficulties. Suppose, for example, that one took seriously a term such as *present* or *future,* so that forms such as *pacati, pakṣyati* would be deemed proper only if the action in question were referrred to current or future time. This is clearly too strong a requirement. There are, after all, sentences such as (27)-(28) (230), in which the "present" forms *pacati, pacyate* occur although the action is

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referred to past time. One might, therefore, consider using terms such as *present, future* merely as labels for sets of endings.

Now, this would be an innocuous procedure in a system where an array of endings such as given in 744 were set up and the use of forms containing these endings were described. But this will not do in a derivational system like Pāṇini's, where abstracted affixes are introduced under meaning conditions and operations are performed on basic endings to arrive at endings as used. For example, consider again the rules under **B**, supposed to supply imperative endings such as *tu, hi, ni* instead of the basic endings *ti, si, mi*. Obviously, these rules should apply only if imperative endings are to be derived. Conditions have to be imposed on the rules. Operating with the terminology used thus far in this section, moreover, there is only one apparent way to do this. One would have to let **B**.1–3 apply on conditions that *ti* and so on are imperative endings. It is now these basic endings, not *tu* and so on, which are first called *imperative*. Of course, this means that distinct sets of basic endings *ti tas jhi* etc. are recognized, such that members of different sets are subject to distinct operations. Thus, for example, imperfect, conditional, aorist, and optative *ti* would now be subject to **A**.1 (*ti* > *t*); optative *t* (< *ti*) would then be subject to **C**.1; present and future *ta* would be subject to **E**.1 (*ta* > *te*); and so forth.

750 The question arises now: Why posit and introduce present *ti*, future *ti*, imperfect *ti*, etc. instead of operating simply with present-future *ti*, imperfect *t*, etc.? Recall that such affixes are abstracted through a procedure that involves reasoning from anvaya and vyatireka, which allows associating particular elements with given meanings (see 667–668). By the procedure in question, moreover, all the verb endings considered can be associated with meanings which they have in common: They signify agents (*kartṛ*) and objects (*karman*) relative to activities. It is thereby legitimate to posit two sets of basic endings: parasmaipada endings *ti, tas,* etc., and

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ātmanepada endings *ta, ātām,* etc. (see 64 with Figure A). Given this, let us consider just how rules might be formulated to introduce these basic endings. One could have rules such as the following:

P. तिङ् कर्तरि कर्मणि च भावे चाकर्मकेभ्यः। (*tiṅ kartari karmaṇi ca bhāve cākarmakebhyaḥ*)

Q. वर्तमाने भवन्ती। (*vartamāne bhavantī*)

R. भूतेऽद्यतनी। (*bhūte'dyatanī*)

S. अनद्यतने ह्यस्तनी। (*anadyatane hyastanī*)

T. परोक्षे परोक्षा। (*parokṣe parokṣā*)

U. भविष्यति भविष्यन्ती। (*bhaviṣyati bhaviṣyantī*)

By P, verb endings (*tiṅ*) in general would be introduced when a kartṛ or a karman is to be signified or, after verbs without a karman, when a kartṛ or an act denoted by the base itself is to be signified. Q–U would then provide for the occurrence of endings called *bhavantī* ('present'), *adyatanī, hyastanī, parokṣā,* and *bhaviṣyantī* ('future') under the following conditions relative to whatever a verb signifies: it is current, present (*vartamāne*); it is referred to the past (*bhūte*) in general, including the day of reference (*adya*); it is referred to the past excluding the day of reference (*anadyatane*); it is not only referred to the past excluding the day of reference but also is outside the direct experience of the speaker (*parokṣe*); it is referred to the future. Additional rules would provide for the distribution of parasmaipada and ātmanepada subsets of all such groups of endings.

Now, the class names *bhavantī, adyatanī, hyastanī, parokṣā, bhaviṣyantī* would also have to be introduced by rules. Moreover, these would be particularly redundant sūtras of the type

V. तिप्तस्झिसिप्थस्थमिब्वस्मस्तातांझथासाथांध्वमिड् वहिमहिङ् भवन्ती। (*tiptasjhisipthasthamibvasmas-*

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tātāṁjhathāsāthāṁdhvamiḍvahimahiṅ bhavantī)

W. तिप्तस्झिसिप्थस्थमिब्वस्मस्तातांझथासाथांध्वमिड्-वहिमहिङ् भविष्यन्ती। (*tiptasjhisipthasthamibvas-mastātāṁjhathāsāthāṁdhvamiḍvahimahiṅ bhaviṣyantī*)

The only purpose served by such rules would be to have sets of identical basic endings, introduced by sūtras like P–Q, in order to states operations in A–I with respect to these separate groups of endings. As I have noted, one cannot consider that these sets of endings are characterized by semantic properties such that, for example, bhavantī endings could be said to occur only when an activity is referred to the present. Clearly, the procedure under discussion is less than elegant.

To be sure, one could avoid repetitious rules such as V–W to some extent. One might have sūtras such as

X. तिप्तसन्तिसिप्थस्थमिब्वस्मस्तेआतेअतेसेआथेध्वे-एवहेमहे भवन्ती। (*tiptasantisipthastha-mibvasmasteāteateseāthedhveevahemahe bhavantī*)

Y. स्यतिस्यतस्स्यन्तिस्यसिस्यथस्स्यथस्यामिस्यावस्-स्यामस्स्यतेस्येतेस्यन्तेस्यसेस्येथेस्यध्वेस्येस्यावहे-स्यामहे भविष्यन्ती। (*syatisyatassyantisyasi-syathassyathasyāmisyāvassyāmassyatesyetesyante-syasesyethesyadhvesyesyāvahesyāmahe bhaviṣyantī*)

X gives the name *bhavantī* to the endings *tip tas anti, sip thas tha, mip vas mas, te āte ate, se āthe dhve, e vahe mahe*. By Y, *syati syatas syanti* and so on have the class name *bhaviṣyantī*. But such rules fails to bring out that one can and should abstract from sequences such as *syati, syatas* an affix *sya* followed by endings. If anything, this alternative is less elegant that the one involving rules such as V–W.

751 There is another approach. As has been pointed out, even if the class names *bhavantī* and so on are used, one must consider them only terms referring to sets of endings, without

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absolute specific semantic values. This being so, the purpose served by such terms can equally well be served by terms with no possible semantic interpretations in Sanskrit, by simple labels. Yet something more is required than mere labels which allow distinct operations to apply to basic endings. After all, Pāṇini's is a derivational system in which affixes are introduced to bases under stated conditions, including meaning conditions. The elements in question, then, should be such as are compatible with rules like **P–U** (750) without requiring rules such as **V–W**.

These requirements are met if one operates with abstract affixes, introduced under meaning conditions and replaced by basic endings. Such abstract affixes are Pāṇini's ten L-affixes (see 232- 233), all of which are introduced to verbs under the same general conditions. Specific L-affixes occur under more particular conditions. All L-affixes are replaced by basic endings, which are then subject to different operations (see 395-403), depending on the L-affixes from which they derive. In this manner, Pāṇini is able to posit a single set of basic verb endings, which belong to two major subgroups, parasmaipada and ātmanepada affixes.

Remarks.

752 1. It is of interest and useful to contrast Pāṇini's system with a system such as Hemacandra's, in which L-affixes are not posited and ten sets of verb endings are recognized. These are given class names as follows:

vartamānā : *tiv tas anti siv thas tha miv vas mas te āte ante se āthe dhve e vahe mahe* (Hem. 3.3.6: **वर्तमाना सिव्तसन्तिसिव्थस्थमिव्वस्मस्तेआतेअन्तेसेआथेध्वेएवहेमहे।**)

saptamī : *yāt yātām yus yās yātam yāta yām yāva yāma īta īyātām īran īthās īyāthām īdhvam īya īvahi īmahi* (Hem. 3.3.7: **सप्तमी यात्याताम्युस्यास्यातम्यातयाम्यावयामईतईयातामईरन्**

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ईथासीयाथामीध्वमीयईवहिईमहि।)

pañcamī : *tuv tām antu hi tam ta āniv āvav āmav tām ātām antām sva āthām dhvam aiv āvahaiv āmahaiv* (Hem. 3.3.8: पञ्चमी तुव्तामन्तुहितम्तआनिवाववामव्तामातामन्ताम्स्व-आथाम्ध्वमैवावहैवामहैव्।)

hyastanī : *div tām an siv tam ta amv va ma ta ātām anta thās āthām dhvam i vahi mahi* (Hem. 3.3.9: ह्यस्तनी दिव्तामन्सिव्तम्तअम्व्वमतआतामन्तथासाथाम्ध्वमिवहिमहि।

adyatanī : *dī tām an sī tam ta am va ma ta ātām anta thās āthām dhvam i vahi mahi* (Hem. 3.3.11: अद्यतनी दितामन्सितम्तअम्वमतआतामन्तथासाथाम्ध्वमिवहिमहि।)

parokṣā : *ṇav atus us thav athus a ṇav va ma e āte ire se āthe dhve e vahe mahe* (Hem. 3.3.12: परोक्षा णवतुसुस्थवथुसणव्वमएआतेइरेसेआथेध्वेएवहेमहो)

āśis : *kyāt kyāstām kyāsus kyās kyāstam kyāsta kyāsam kyāsva kyāsma sīṣṭa sīyāstām sīran sīṣṭhās sīyāsthām sīdhvam sīya sīvahi sīmahi* (Hem. 3.3.13: आशीः क्यात्क्या-स्ताम्क्यासुस्क्यास्क्यास्तम्क्यास्तक्यासम्क्यास्वक्यास्मसीष्ट-सीयास्ताम्सीरन्सीष्ठास्सीयास्थाम्सीध्वम्सीयसीवहिसीमहि।)

śvastanī : *tā tārau tāras tāsi tāsthas tāstha tāsmi tāsvas tāsmas tā tārau tāras tāse tāsāthe tādhve tāhe tāsvahe tāsmahe* (Hem. 3.3.14: श्वस्तनीतातारौतारस्तासितास्थस्तास्थ-तास्मितास्वस्तास्मस्तातारौतारस्तासेतासाथेताध्वेताहेतास्वहे-तास्महे।)

bhaviṣyantī : *syati syatas syanti syasi syathas syatha syāmi syāvas syāmas syate syete syante syase syethe syadhve sye syāvahe syāmahe* (Hem. 3.3.15: भविष्यन्तीस्यतिस्यतस्स्यन्ति-स्यसिस्यथस्स्यथस्यामिस्यावस्स्यामस्स्यतेस्येतेस्यन्तेस्यसेस्येथे-

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स्यध्वेस्येस्यावहेस्यामहे।)

kriyātipatti: *syat syatām syan syas syatam syata syam syāva syāma syata syetām syanta syathās syethām syadhvam sye syāvahi syāmahi* (Hem. 3.3.16: क्रियातिपत्तिः स्यत्स्यताम्स्यन्स्यस्स्यतम्स्यतस्यम्स्यावस्यामस्यतस्येताम्-स्यन्तस्यथास्स्येथाम्स्यध्वम्स्येस्यावहिस्यामहि।)

Hemacandra's rules are obviously of the type X–Y (750), and in his system endings referred to by the class names thus assigned are introduced by means of sūtras of the type Q–U. For example, Hem. 5.3.4: भविष्यन्ती (वर्त्स्यति) (*bhaviṣyantī* [*vartsyati* 1]) provides that endings called *bhaviṣyantī* occur if an act is referred to future time (*vartsyati*).

753 2. Hemacandra is not the first to have used such a scheme. A similar system is found in the Kātantra. However, here forms of the types *bhaviṣyati, abhaviṣyat* are treated as containing endings conjoined with *sya*. Thus, Kāt. 3.1.24 (वर्तमाना तितसन्तिसिथस्थमिवस्मस्तेआतेअन्तेसेआथेध्वेए-वहेमहे। [*vartamānā titasantisithasthamivasmasteāteanteseāthe dhveevahemahe*]) and 3.1.27 (ह्यस्तनी दितामन्सितम्तअम्वम-तातामन्तथासाथाम्ध्वमिवहिमहि। (*hyastanī ditāmansitamta-amvamatātāmantathāsāthāmdhvamivahimahi*]) provide that *ti tas anti* and so on are called *vartamānā,* and that *di tām an* and so forth are called *hyastanī*. According to Kātantra 3.1.32-33 (स्यसंहितानि त्यादीनि भविष्यन्ती। द्यादीनि क्रियातिपत्तिः। [*syasaṁhitāni tyādīni bhaviṣyantī, dyādīni kriyātipattiḥ*]), *ti* and so forth conjoined with *sya* (*syasaṁhitāni*) are called *bhaviṣyantī*, and *di* and so forth conjoined with *sya* are called *kriyātipatti*.

In the present context, it is not necessary to consider more details concerning such grammars. Suffice it to note that the use of labels like *bhavantī* for verb endings goes back

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earlier still. For example, in A 3.2.123 vt. 1 (प्रवृत्तस्याविरामे शिष्या भवन्त्यवर्तमानत्वात्), A 3.3.15 vt. 1 (परिदेवने श्वस्तनी भविष्यन्त्यर्थे), Kātyāyana uses *bhavantī* and *śvastanī* with reference to endings; in a ślokavārttika which Patañjali cites in the Mahābhāṣya on A 1.2.18, *parokṣā* is used of endings (Bh. I.199.14: ज्ञापकान्नपरोक्षायाम्).

4.2.4. Basic forms of nominal bases.

754 Consider now the following pairs:

(326) a. *bhrātuḥ putraḥ* b. *bhrātṛvyaḥ* 'brother's son'
(327) a. *svasuḥ putraḥ* b. *svasrīyaḥ* 'sister's son'
(328) a. *duhituḥ putraḥ* b. *dauhitraḥ* 'daughter's son'
(329) a. *putrasya putraḥ* b. *pautraḥ* 'son's son'
(330) a. *upagor apatyam* b. *aupagavaḥ* 'descendant of Upagu'

As shown, (326a)-(329a) have the same meanings as (326b)-(329b). In addition, it is possible, by the procedure outlined in 667-668, to abstract from the items in b of these pairs affixes to which one can attribute the meaning 'offspring, descendant'. Thus, (326b) is divisible into a base *bhrāṭṛ* 'brother' and an affix *-vya* (*vyaṭ*: A 4.1.92, 144 [331, 335]): *bhrāṭṛ-vya-s*, with the ending *su*. Similarly, *svasrīya-* of *svasrīyaḥ* should be analyzed into *svasṛ* and an affix *-īya* (see A 4.1.143), before the vowel of which semivowel replacement applies to the *-ṛ* of *svasṛ* (A 6.1.77 [125]). Given the exact parallelism between (326b)-(327b) and (328b), moreover, one is justified in considering that *dauhitra* consists of *duhiṭṛ* and an affix *a* (*añ*: A 4.1.104). Here again, semivowel substitution applies to *-ṛ* before the affix. Something more has to take effect, however, if one is to arrive at *dauhitra*. In view of the analysis made, one must say that the affix *a* of this derivate also conditions the substitution of *-au-* for the *-u-* in *duhiṭṛ* (see A 7.2.117 [479]). Again, *pautra*

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of (329b) should be treated as containing *putra* 'son' followed by an affix that conditions the replacement of *-u-* by *-au-*. This affix can only be *a*. In order to derive *pautra* from *putra-a*, then, one has to posit another operation: *-a* of a stem is deleted before the affix found in *pautra* (A 6.4.148 [504]). In accordance with what has been said, one is justified in saying that *aupagava* of (330b) contains the base *upagu* followed by a suffix that conditions the replacement of the first *u* by *au* (A 4.1.83 [335]), and once more this affix must be considered to condition another operation: *-u* of a preceding stem is replaced by the guṇa vowel *-o* (A 6.4.146 [504]).

755 There is ample justification for treating items like those in (326b)-(330b) as not only semantically but also formally more complex than others, to which they are related in ways that are clear and can be stated in rules of a derivational system. That is, given items are derivates that contain affixes which condition particular operations on more primitive items. This being established, one can generalize and consider that such operations in grammatical contexts take effect elsewhere also, though there may not be any question of semantically more and less complex elements. Specifically, one can posit basic forms of nominal bases and treat other forms of these bases as resulting from operations that apply in particular contexts.

756 As I pointed out in Section 4.2.1, phonological considerations dictate positing certain forms as basic. Thus, Pāṇini posits *cit, śarad, vīrudh* (see 708), and has rules whereby *d* substitutes for pada-final *t* or *dh* and *t* replaces these before voiceless consonants. Similarly, Pāṇini operates with basic items in *-th, -p, -bh* ; e.g., *dadhimath* 'one who churns yogurt' (nom. sg. *dadhimad / dadhimat,* instr. sg. *dadhimathā,* instr.pl. *dadhimadbhiḥ,* loc. pl. *dadhimatsu*), *dharmagup* 'one who protects, keeps his duty' (*dharmagub / dharmagup, dharmagupā, dharmagubbhiḥ, dharmagupsu*), *kakubh* 'peak' (*kakub / kakup, kakubhā, kakubbhiḥ, kakupsu*). In addition, basic forms with palatals, such as *vāc* and *sraj,* are

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posited; in pada-final position, velars replace the final consonants of such bases.

Again, Pāṇini posits *tviṣ, dviṣ,* and *viś,* with basic *-ṣ* and *-ś,* subject to replacement in particular contexts (see 701, 703). He also operates with a basic form *diś* 'direction' (see A 3.2.59 [295]), as in *diśau* (nom.-acc. du.), *diśaḥ* (nom.-acc. pl.), *diśā* (instr. sg.), which are comparable to *viśau, viśaḥ, viśā.* However, *diś,* posited on the basis of such parallelism, cannot be allowed to have its *-ś* replaced by *-ṣ* (A 8.2.36 [544]), since this would result in forms such as **diḍbhyām,* **diḍbhiḥ,* comparable to *viḍbhyām, viḍbhiḥ,* instead of *digbhyām, digbhiḥ.* Hence, a special rule is required, replacing base-final *-ś* with a velar stop in particular instances (A 8.2.62 [295]).

Pāṇini also operates with basic forms in *-h,* such as *abhralih* '(which licks clouds, that is,) lofty', *upānah* 'sandal': *abhralihau, abhralihaḥ, abhralihā* and *upānahau, upānahaḥ, upānahā* are parallel. Here too, however, there is a general rule and an exception to it. *-h* of a base is generally replaced by *-ḍh,* whence *-ḍ* in pada-final position and before consonants other than semivowels or nasals (A 8.2.31, 8.4.53 [544, 577]); e.g., *abhraliḍ* (nom. sg. < ... *abhralih-s*), *abhraliḍbhyām, abhraliḍbhiḥ.* If this replacement were allowed to apply to *upānah,* the result would be forms like **upānaḍbhyām,* **upānaḍbhiḥ* instead of *upānadbhyām, upānadbhiḥ.* Consequently, a special rule is required, whereby a dental replaces the *-h* of *nah.* In view of forms such as *naddhum* (< ... *nah-tum*: A 8.2.40, 8.4.53 [547, 577]), the substitute is *dh* (A 8.2.34 [544]).

757 There is a base *-yuj,* as in

(331) a. *aśvayug / aśvayuk* b. *aśvayujā* c. *aśvayugbhiḥ*
d. *aśvayukṣu* 'one who yokes horses'

As can be seen, this has forms parallel to those of (240) *sraj* (708). Similarly, from the uncompounded nominal base *yuj,* derived with the kṛt suffix ***kvin*** (A 3.2.59 [295]), one has *yujā, yugbhiḥ, yukṣu.* In certain forms, however, a compound such as *aśvayuj* differs from simple *yuj* : *yuṅ* (nom. sg.), *yuñjau* (nom.-acc. du.), *yuñjaḥ* (nom. pl.), *yuñjam* (acc. sg.) as opposed

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to *aśvayug, aśvayujau, aśvayujaḥ, aśvayujam.* Given the facts noted, it is proper to let an augment *-n-* (*num*) be introduced to the stem *yuj-* before sarvasnāmasthāna endings in order to account for the uncompounded forms with *-ñ* and *-ñj-*: *yuj-s* > *yuj* (A 6.1.68 [404, 467]) > *yunj* (A 7.1.71 [488]) > *yun* (A 8.2.23 [542]) > *yuṅ* (A 8.2.62 [550]), *yuj-au* > *yunj-au* > *yuṁj-au* (A 8.3.24 [559]) > *yuñjau* (A 8.4.58 [580]).

758 A base *sat* 'which is, being' is to be abstracted from forms like *satā* (instr. sg. masc.-nt.), *sadbhyām* (instr. du.), *sadbhiḥ* (instr. pl.), *satsu* (loc. pl.). Here again, however, some forms are to be accounted for with an augment *-n-*: *san* (nom. sg. masc.), *santau* (nom.-acc. du.), *santas* (nom. pl.), *santam* (acc. sg.). In Pāṇinian terms, *num* is added to the stem *sat-* before sarvanāmasthāna endings (A 7.1.70 [488]). This augment is not introduced after *sat* (nom.-acc. sg. nt.) gotten from *sat-s* by deleting the ending *su* or *am* after a neuter base (A 7.1.23 [495]): The deleted ending is not a member of the sarvanāmasthāna class (A 1.1.43 [69]).

It will not do, however, simply to provide for adding the augment *num* to such participial stems in general before the endings in question. For example, *dadat* (nom. sg. masc.), *dadatau, dadataḥ, dadatam* 'one who gives' contain a participial stem *dadat-* but lack this augment; *dadanti* (nom.-acc. pl .nt.) alternates with *dadati,* which also lacks the augment. In effect, a series of particular rules is required in addition to the general rule that introduces *num* (see 489). Nevertheless, all such participial bases are to be posited with a basic form in *-at.*

759 The augment *num* is also to be added to stems of the type *gomat-* 'rich in cows' (*gomatā, gomadbhyām, gomadbhiḥ, gomatsu*) in order to account for *gomantau, gomantaḥ, gomantam.* In addition, forms of the type *gomān* require that the *-a-* of *-at-* be replaced by a long vowel (A 6.4.14 [469]). This substition applies only if the stem is followed by an ending *su* that is not a sambuddhi, so that vocatives such as *goman* are accounted for. The same long-vowel substitution

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applies in deriving forms of the type *suyaśāḥ* (nom. sg. masc.) 'one who has good fame' from stems with *-as* (cf. *suyaśasā*).

760 The domains of variants in

(332) a. *mahataḥ* (acc. pl. masc.) *mahatā* (instr .sg.)
mahadbhyām (instr. du.) *mahadbhiḥ* (instr. pl.)
b. *mahān* (nom. sg.) *mahāntau* (nom.-acc. du.)
mahāntaḥ (nom. pl.) *mahāntam* (acc. sg.) 'great'

justify positing a base *mahat*, which appears also in *mahat* (nom.- acc. sg. nt.), although *mahān* and so on have *-ā-* in more forms than does a stem like *gomat-*. Before sarvanāmasthāna endings, the augment *num* is added, and the vowel of *-ant-* thus gotten is then replaced by *ā* (A 6.4.10 [469]). *mahānti* (nom.-acc. pl. nt.) is similarly derived from *mahat-i*, with the sarvanāmathāna ending *Śi*.

balīyān, balīyāṁsau, balīyāṁsaḥ, balīyāṁsam 'stronger' are accounted for by the same operations, starting from a stem *balīyas-*, which appears also in forms such as *balīyasaḥ, balīyasā, balīyaḥ* (nom.-acc. sg. nt.). The *-o-* of items like *balīyobhyām, balīyobhiḥ* is also appropriately derived from a basic *-as* (see 703-706). In addition, *balīyāṁsi* (nom.-acc. pl. nt.) is derived from *balīyas-i*, just as *mahat-i* serves to account for *mahānti*. *chandāṁsi, havīṁṣi, dhanūṁṣi* are derived in a similar manner from bases *chandas, havis*, and *dhanus*.

761 *pumān, pumāṁsau, pumāṁsaḥ, pumāṁsam* bear obvious resemblances to corresponding forms of a stem like *balīyas-*. However, *puṁsaḥ* (acc. pl.), *puṁsā, pumbhyām, pumbhiḥ* do not conform to what is expected from a base in *-as*. Nor is a form like *puṅ* in *puṅgava* 'bull' what one should expect as the first member of a compound from a base *pumas*. The forms in question speak for positing *pums* (> *puṁs*: A 8.3.24 [559]), whose final final cluster *-ms* is simplified at a pada boundary (A 8.2.23 [542]). The *-m* thus obtained is then replaced by *-ṁ* (A 8.3.23 [559]), which itself is subject to replacement by nasals homogeneous with following stops (A 8.4.58 [580]). Having posited a base *pums*, then, Pāṇini accounts for *pumān*

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and other forms which require a stem form *pumas-* by substituting *-as* for the *-s* of *pums-* (A 7.1.89 [473]).

762 (333) a. *balin* (voc. sg.) *balinau balinaḥ balinam balinā*
b. *balibhyām balibhiḥ bali* (nom.-acc. sg. nt.)
c. *balīni* (nom.-acc. pl. nt.)

contain: *balin-*, *bali-*, and *balī-*. The second occurs only at pada boundaries, the last when the ending *śi* follows, which speaks for considering *balin* as the basic form. The variant *bali* is gotten by deleting pada-final *-n* (A 8.2.7 [539]): *balin-s / am* > *balin* (A 7.1.23 [495]) > *bali, balin-bhyām* > *balibhyām*. The variant *balīn-* in *balīni* is accounted for by letting *-ī-* replace the penultimate sound of *balin-* before the sarvanāmasthāna ending *śi* (A 6.4.12 [469]). Long-vowel substitution, together with deletion of pada-final *-n*, also accounts for *balī* (nom. sg. masc.): *balin-s* > *balin* (A 6.1.68 [404, 467]) > *balīn* (A 6.4.13 [469]) > *balī*. Long-vowel replacement may apply in *balin* from *balin-s* only if the ending *su* is not a sambuddhi ending. In addition, to account for *balin*, deletion of stem-final *-n* in *balin* from *balin-s* with sambuddhi *su* has to be disallowed (A 8.2.8 [539]). As shown, *balin* obtained by deleting *su* has the same status as *balin-s* (A 1.1.62 [103]), so that the substitution of *-ī-* for the penultimate vowel of *balin* takes effect as though the stem actually occurred with an ending. On the other hand, the zero substitute for *su* after neuter *balin* does not have this effect, since the ending is not classed as a sarvanāmasthāna after a neuter base (see A 1.1.43 [69]): *balin-s* > *balin* > *bali*.

763 (334) a. *brahmahan* (see A 3.2.87 [295]) *brahmahaṇau brahmahaṇaḥ brahmahaṇam brahmahaṇā*
b. *brahmahabhyām brahmahabhiḥ* c. *brahmahā*

have *-han-* and *-ha-* comparable in their distribution to *balin-*, *bali-* of (333), and *brahmahā* is comparable to *balī*. If a basic form *-han* is posited, the same operations that serve to derive *balī, balibhyām* can apply to account for *-hā, -ha-*: *-han-s* > *-han* > *-hān* (A 6.4.13 [469]) > *-hā, -han-bhyām* > *-habhyām*, and so on.

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764 Similarly, as the penultimate vowel of *balin-* is replaced by a long vowel before *śi* to account for *balīni,* so also is it possible to derive *nāmāni* 'names', *parvāṇi* 'joints, sections' by letting *-ā-* replace penultimate *-a-* in stems *nāman-, parvan-* before *śi* (A 6.4.8 [469]). In addition, *nāma* (nom.-acc. sg.), *parva* are immediately describable in the same way as *bali*: *nāman-s / am* > *nāman* > *nāma. nāma-, parva-* in *nāmabhyām, parvabhyām, nāmabhiḥ, parvabhiḥ,* and so forth are accounted for by dropping the *-n* of *nāman-, parvan-* at a pada boundary. Again, *ātman-* 'self', which appears in *ātman* (voc. sg.), has its *-n* deleted to derive *ātmabhyām, ātmabhiḥ,* and so on. All this speaks for positing bases *-han, -nāman, parvan, ātman,* with *-n,* just as *balin* ends with this consonant.

The types with *-an* and *-in* also differ in details. Thus, *ātmānau, ātmānaḥ, ātmānam* have a long penultimate vowel, but *-han, balin* have short penultimate vowels in equivalent forms. Given these facts and also that *-hā, balī* too have long base-vowels, it is nevertheless proper to posit bases in *-an* of the type *ātman,* as Pāṇini indeed does. However, long-vowel substitution applies more generally for the type *ātman*: The penultimate vowel of such a base is replaced by *-ā-* before any sarvanāmasthāna suffix other than *su* classed as sambuddhi (A 6.4.8).

765 By the operations noted,

(335) a. *rājan* b. *rājabhyām rājabhiḥ*
c. *rājā rājānau rājānaḥ*

are also accounted for. Additional rules are needed to derive forms such as *rājñaḥ* (acc. pl., abl. sg., gen. sg.), *brahmaghnaḥ, nāmnī* (nom.-acc. du.), where *-n-* occurs instead of *-an-* before vowel-initial endings other than those of the sarvanāmasthāna set: The *-a-* of *-an* in a stem is dropped before such endings, optionally deleted before *ñi* and *śī,* but kept if *-an* follows a consonant cluster that ends with *v* or *m* (see A 6.4.134, 136-137 [502]).

766 *pañcabhiḥ, pañcabhyaḥ, pañcasu* conform to the pattern of bases in *-an,* and *pañca* (nom.-acc. pl.) is derivable from

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pañcan- with deletion of pada-final *-n* : *pañcan-as* > *pañcan* (A 7.1.22 [494]) > *pañca* (A 8.2.7 [539]). *pañcānām*, however, does not conform to the usual pattern of *-an*-stems and requires a special rule (A 6.4.7 [468]). Special provision also has to be made to account for *aṣṭābhiḥ* beside *aṣṭabhiḥ* (see A 7.2.84 [474]).

767 (336) a. *pathibhyām pathibhiḥ* b. *panthānau panthānaḥ panthānam* c. *pathaḥ pathā*

Forms of the type in (336b) are like equivalent forms of *rājan* (see (335c) [765]), but forms in (336a) are comparable to equivalent forms of *balin-* (see (333b) [762]). In addition, *pathaḥ, pathā*, and so on, with a stem *path-*, and *panthāḥ* (nom. sg.) conform to neither of these types. Now, *pathi-* can be accounted for through deletion of pada-final *-n* before the consonant-initial endings *bhyām, bhis, bhyas, sup*. The same operation accounts also for *pathi-* in compounds, as in *pathi-kṛt* 'path maker', as opposed to *rāja-* in *rāja-puruṣa*. It is best, therefore, to posit a base *pathin* for deriving the forms in (336). The stem form *path-* is then gotten by dropping *-in* before vocalic endings *śas* and so on (A 7.1.88 [472]), and *panthan-* is accounted for by replacing the *-i-* of *-in-* with *-a-* when sarvanāmasthāna endings follow and substituting *-nth-* for *-th-* in these contexts (A 7.1.86-87). In addition, before the particular ending *su*, the final consonant of the stem is replaced by *-ā* (A 7.1.85): *pathin-s* > *pathiā-s* > *panthiā-s* > *panthaā-s* > *panthās, pathin-au* > *panthin-au* > *panthan-au* > *panthānau, pathin-as* (ending *śas*) > *pathas, pathin-bhyām* > *pathibhyām*.

768 (337) a. *śvabhyām śvabhiḥ śvabhyaḥ śvasu* b. *śvā śvānau śvānaḥ śvānam* c. *śunaḥ śunā śune śunaḥ śunoḥ śunām śuni*

(337a,b) are like the equivalent forms of a base in *-an* such as *rājan-* of (335) (765), which justifies positing a base *śvan*. On the other hand, (335c) does not conform to the same pattern; contrast *rājñaḥ rājñā rājñe rājñaḥ rājñoḥ rājñām rājñi*. Yet it is not plausible to posit a base *śun* and to have a rule

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inserting *-a-* in order to account for *śvan-*. For *śva-* occurs not only followed by consonant-initial endings which regularly have pada-boundaries before them but also before a pada boundary when it is the first member of a compound, as in *śva-māṁsa* 'dog meat'. There is a pattern according to which pada-final *-n* is deleted (see A 8.2.7 [539]) and pentultimate vowels of bases followed by endings other than those with pada boundaries undergo replacements. It is best, then, to posit *śvan* as the base. Forms with *śun-* are then derived through samprasāraṇa substitution (A 6.4.133 [501]): *śvan-as* (ending *śas*) > *śuan-as* > *śunas*, *śvan-ā* ... > *śunā*, and so on. Similarly, *yūn-* of the set

(338) a. *yuvabhyām yuvabhiḥ yuvabhyaḥ yuvasu* b. *yuvā yuvānau yuvānaḥ yuvānam* c. *yūnaḥ yūnā yūne yūnaḥ yūnoḥ yūnām yūni*

is derived from *yuvan* through samprasāraṇa replacement; e.g., *yuvan-as* > *yuuan-as* > *yuunas* > *yūnas* (A 6.1.101 [532]).

769 Other nominal forms too are best accounted for by samprasāraṇa substitution. Consider now

(339) a. *vidvān vidvāṁsau vidvāṁsaḥ vidvāṁsam*
b. *viduṣaḥ viduṣā viduṣe viduṣaḥ viduṣoḥ viduṣām viduṣi* c. *vidvadbhyām vidvadbhiḥ vidvadbhyaḥ vidvatsu*

The forms of (339a) are exactly like comparable forms of *balīyas* (760); they can be derived from a base *vidvas* 'one who knows, learned', by the same operations as serve to derive *balīyān* and so on. The forms in (339b) should, then, be derived through samprasāraṇa substitution (A 6.4.131 [501]); e.g., *vidvas-as* (ending *śas*) > *viduas-as* > *vidus-as* > *viduṣas* (A 8.3.59 [563]). The forms in (339a,b) clearly require positing a base in *-s*. On the other hand, the forms in (339c) show a stem *vidvad-*, *vidvat-* before endings with pada boundaries, and such forms occur also as first members of compounds, as in *vidvat-sabhā* 'assembly of the learned'. There is no parallel for a rule replacing *-t* or *-d* with *-s* in pada-interior position, so that, in accordance with the items which clearly

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contain *vidvas-*; it is best to posit this as the basic form and let *-s* be replaced by a dental stop in pada-final position (A 8.2.72 [551]).

770 Consider now

(340) a. *caturaḥ caturbhiḥ caturbhyaḥ caturṇām caturṣu* b. *catvāraḥ catvāri* (nom.-acc. nt.)

One might think of invoking samprasāraṇa replacement to account for the stem form *catur-*, but this is not justifiable. To begin with, *catur-* clearly has a broader domain than *catvār-*, which occurs before the sarvanāmasthāna endings *jas, śi*. In addition, the distribution of *catvār-* and *catur-* simply does not conform to that of other stem forms concerning which samprasāraṇa substitution is justifiably invoked. Thus, one has (337a) *śvabhiḥ* and (339c) *vidvadbhiḥ* (768-759), which do not involve samprasāraṇa, but *caturbhiḥ*, which would involve this replacement under the possibility being considered. Similarly, *catur-* in a compound like *catur-akṣa* 'four-eyed' contrasts with *vidvat-* in *vidvat-sabhā*. It is preferable, therefore, to posit *catur* as the basic variant. *catvāraḥ* and *catvāri* are then accounted for by introducing an augment *-ā-* after the last vowel of *catur-* before sarvanāmasthāna endings (A 7.1.98 [490]): *catur-as* (ending *jas*) > *catuār-as* > *catvāras* (A 6.1.77 [125]), *catur-i* (ending *śi*) > ... *catvāri*.

771 For similar reasons, *anaḍuh* is the base posited to account for

(341) a. *anaḍuhaḥ anaḍuhā anaḍuhe anaḍuhaḥ anaḍuhoḥ anaḍuhām anaḍuhi* b. *anaḍvāhau anaḍvāhaḥ anaḍvāham* c. *anaḍvan anaḍvān* d. *anaḍudbhyām anaḍudbhiḥ anaḍudbhyaḥ anaḍutsu*

(341a) *anaḍvāhau* and so on are derived in the same manner as *catvāraḥ*, by adding the augment *-ā-*. *anaḍvān* requires not only this augment but also *-n-* (A 7.1.82 [490]). The vocative singular *anaḍvan* is derived by introducing *am* (A 7.1.99) together with *-n-*. Moreover, as pada-final *-s* in *vidvas-* is replaced by a dental stop before a pada boundary, so is the *-h* of *anaḍuh-* replaced by such a stop (A 8.2.72 [551]) in deriving

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anaḍudbhyām and so on.

772 (342) a. *devī devīm devīḥ devībhyām devībhiḥ devībhyaḥ devīnām devīṣu* b. *devi* c. *devyau devyaḥ devyā devyai devyāḥ devyām*

(343) a. *vadhūḥ vadhūm vadhūbhyām vadhūbhiḥ vadhūbhyaḥ vadhūnām vadhūṣu* b. *vadhu* c. *vadhvau vadhvaḥ vadhvā vadhvai vadhvāḥ vadhvām*

The stem forms *devy-*, *vadhv-* are accounted for by a general phonological rule that lets *y* and *v* occur instead of *i-* and *u-* vowels before other vowels (A 6.1.77 [125]). Moreover, there are no general phonological substitutions that apply to base-final vowels at pada boundaries before consonants. Hence, *devī-*and *vadhū-* are properly treated as the basic stem forms (see also 697). Special rules are needed to derive *devīm, vadhūm* from *devī-am, vadhū-am* and *devīs, vadhūs* from *devī-as, vadhū-as,* with the ending *śas* (see A 6.1.102, 107 [532-533] and 722). The short vowels of the vocative singular forms *devi, vadhu* are gotten by replacing *-ī -ū* with the corresponding short vowels (A 7.3.107 [483]).

773 (344) a. *strī strīm/ striyam strīḥ/ striyaḥ strībhyām strībhiḥ strībhyaḥ strīṇām strīṣu* b. *striyau striyā striyai striyāḥ striyoḥ striyām*

(345) a. *dhīḥ dhībhyām dhībhiḥ dhībhyaḥ dhīṣu* b. *dhiyau dhiyaḥ dhiyam dhiyaḥ dhiyā dhiyai/ dhiye dhiyāḥ/ dhiyaḥ dhiyoḥ dhiyām dhiyām/ dhiyi*

(346) a. *bhrūḥ bhrūbhyām bhrūbhiḥ bhrūbhyaḥ bhrūṇām/ bhruvām bhrūṣu* b. *bhruvau bhruvaḥ bhruvam bhruvaḥ bhruvā bhruvai/ bhruve bhruvāḥ/ bhruvaḥ bhruvām/ bhruvi*

The obvious parallelism between forms of (344a)-(346a) and (342)-(343) (772) justifies positing *strī* 'female, woman', *dhī* 'thought', and *bhrū* 'brow'. However, instead of *stry-*, *dhy-*, *bhrv-*, one has *striy-*, *dhiy-*, and *bhruv-* before vocalic endings, so that exceptions to the general rule of semivowel substitution have to apply (see A 6.4.77, 79, 80 [452, 500]).

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774 (347) a. *patiḥ patim patibhyām patibhiḥ patibhyaḥ patiṣu* b. *patī patīn patīnām* c. *patyā patye patyuḥ patyoḥ patyau* d. *pate patayaḥ*

The stem form *paty-* of (347c) is immediately accounted for by the general rule of semivowel substitution (A 6.1.77 [125]), so that *pati-* is justifiedly posited as the basic stem. *patim* is now derived from *pati-am* in the same way that *devīm* derives from *devī-am* (see 772). *patī,* then, is similarly derived from *pati-au,* by substituting *-ī-* for the stem vowel *-i* and the endings *au, auṭ* (see (270) [718]). The same operation, applied to *pati-as* (ending *ṡas*), gives *patīṣ,* so that another rule is needed to obtain *patīn* (see A 6.1.103 [532]). *patīnām* also has a long base vowel, by a rule that provides for long-vowel replacement before *nām* (A 6.4.3 [468]). Once *pati* is posited as the base, moreover, the vocative singular *pate* is accounted for through guṇa substitution (A 7.3.108 [484]). In addition, since *ay* regularly replaces *e* before vowels (A 6.1.78 [524]), *patayaṣ* also is derived by letting guṇa replacement apply to the stem of *pati-as* (ending *jas*) (see A 7.3.109 [484]).

775 (348) a. *matiḥ matim matibhyām matibhiḥ matibhyaḥ matiṣu* b. *matī matīḥ matīnām* c. *matyā matyai matyāḥ matyoḥ matyām* d. *mate mataye mateḥ* e. *matau*

The rules which serve to derive (347c,d) also account for *maty-* and *mate-* in (348c,d) from a base *mati* 'thought'. The variant *mate-* has a broader domain than that of *pate-* in (347): *mataye* (< *mate-e*) as opposed to *patye.* A rule is thus needed whereby guṇa substitution applies to a stem such as *mati-* before the endings *ñe, ñasi, ñas* (A 7.3.111 [484]). Of course, in order to account for *mateḥ* on the basis of *mate-as,* another operation must be allowed to apply: The *-e* of the stem and the vowel of the endings are both replaced by the former (A 6.1.110 [533]). Moreover, *matau* requires still another special rule, substituting *-a* for stem-final *-i* (A 7.3.119 [497]).

The forms in

(349) a. *dhenuḥ dhenum dhenubhyām dhenubhiḥ*

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dhenuṣu b. *dhenū dhenūḥ dhenūnām* c. *dhenvā dhenvai dhenvāḥ dhenvoḥ dhenvām* d. *dheno dhenave dhenoḥ* e. *dhenau*

exhibit the same patterning as in (348), except, of course, that one has here *-u -o -av* instead of *-i -e -ay*. The rules which provide for guṇa and semivowel replacement to derive forms in (348) apply also to derive forms of (349) from a base *dhenu*, the final vowel of which is replaced by *-ū* and *-a*, respectively, in accounting for *dhenūnām* and *dhenau*.

776 (350) a. *agniḥ agnim agninā agnibhyām agnibhiḥ agniṣu* b. *agnī agnīn agnīnām* c. *agnyoḥ* d. *agne agnaye agneḥ* e. *agnau*

(351) a. *vāyuḥ vāyum vāyunā vāyubhyām vāyubhiḥ vāyuṣu* b. *vāyū vāyūn vāyūnām* c. *vāyvoḥ* d. *vāyo vāyave vāyoḥ* e. *vāyau*

are parallel to (348-(349) except in three ways. First, *agnīn, vāyūn* have *-īn, ūn* instead of *-īs, -ūs*. This is accounted for by the rule which replaces the *-s* of *śas* by *-n* in the masculine, as in *patīn* (see 774). In addition, *agninā* and *vāyunā* differ not only from *matyā, dhenvā* but also from *patyā*. A particular rule is required, then, whereby *nā* replaces the ending *ṭā* after a particular subset of stems in *-i -u* (A 7.3.120 [497]). Finally, (350)-(351) lack certain alternations found in (348)-(349); for example, *agnaye, agneḥ* as opposed to *matyai / mataye, matyāḥ / mateḥ*. Guṇa substitution before endings marked with *ṅi* is optional for a subset of feminines in *-i* or *-u*, following which the endings are also optionally augmented with initial *ā* (A 7.3.112 [499]), but such guṇa subsitution is obligatory for masculine bases of the type *agni, vāyu*. In Pāṇini's sytem, this is accounted for through classifications: Stems such as *agni-* and *vāyu-* are assigned to the ghi class alone, but feminine stems like *mati-* and *dhenu-* are allowed to belong both to the ghi and the nadī classes (A 1.4.6-7 [56-57]).

777 *trayaḥ trīn tribhiḥ tribhyaḥ triṣu* are obviously of the type (350) *agnayaḥ* and so on. However, the genitive plural

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trayāṇām is equally clearly not of the same type as *agnīnām*, although it too has a long vowel before *-nām*. Having posited *tri* 'three' as the basic form, then, Pāṇini lets *traya-* replace the stem *tri-* before *-ām* (A 7.1.53 [486]).

778 (352) a. *sakhibhyām sakhibhiḥ sakhibhyaḥ sakhiṣu*
b. *sakhīn sakhīnām* c. *sakhyā sakhye sakhyuḥ sakhyoḥ sakhyau* d. *sakhe* e. *sakhāyau sakhāyaḥ sakhāyam* f. *sakhā*

(352a-d) are like equivalent forms of *pati* (774). Accordingly, Pāṇini operates with a basic stem *sakhi-* 'friend' and allows sarvanāmasthāna endings other than sambuddhi *su* condition vṛddhi replacement in this stem (A 7.1.92 [511]). This does not account for *sakhā* (nom. sg.). Note, however, that *sakhā* is formally similar to *rājā* (765). In accordance with this, Pāṇini accounts for *sakhā*, derived from *sakhi-s*, by replacing the *-i* of the stem with *-an* (A 7.1.93 [471]), thus obtaining *sakhan-s*, whence *sakhā* derives in the same way that *rājā* derives from *rājan-s*.

779 In a similar vein, consider *trīṇi* (nom.-acc. nt. pl.). This is the only neuter form that differs from forms masculine forms *tribhiḥ* and so on (777), so that neuter forms also should be derived from *tri*. Nevertheless, *trīṇi* is comparable to *balīni*, from *balin*. Since other forms require a base *tri*, then, Pāṇini accounts for *trīṇi* by introducing the augment *num* to this base before the ending *śi* (A 7.1.73 [488]). Once *trin-i* is thus gotten, the long-vowel substitution that applies in the type *balīni* (< *balin-i*: A 6.4.8 [469]) takes effect: *trin-i* > *trīn-i* > *trīṇi* (A 8.4.2 [570]).

Consider also

(353) a. *vāri vāriṇā varibhyām vāribhiḥ vāribhyaḥ vāriṣu* b. *vāriṇām* c *vāriṇi vāriṇi vāriṇe vāriṇaḥ vāriṇoḥ vāriṇi*

(354) a. *madhu madhunā madhubhyām madhubhiḥ madhubhyaḥ madhuṣu* b. *madhūnām* c. *madhunī madhūni madhune madhunaḥ madhunoḥ madhuni*

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(353a,b) and (354a,b) *vāriṇā, madhunā,* and so on are comparable to equivalent forms of *agni* and *vāyu* (776). In particular, the genitive plurals *vāriṇām, madhūnām* are of the types *agnīnām, vāyūnām,* not of the type *balinām.* It is, therefore, proper to accept *vāri* and *madhu* as the basic variants. On the other hand, (353c) and (354c) are comparable to equivalent forms of *balin* (762). Accordingly, Pāṇini introduces the augment *num* to neuter stems in final *i- u- ṛ-* vowels before vowel-initial endings (A 7.1.73).

780 (355) a. *asthi asthibhyām asthibhiḥ asthibhyaḥ asthiṣu* b. *asthinī asthīni* c. *asthnā asthne asthnaḥ asthnoḥ asthnām asthni*

(355a,b) speak for positing a base *asthi,* comparable to *vāri* of (353). On the other hand, forms with vowel-initial endings of the third through seventh triplets are of the type *rājan* (765). It is difficult to justify positing *asthan* as the base for deriving (355a,b). There is no parallel for *-i-* replacing the penultimate *-a-* of such a base before *śI, śI.* In addition, the endings *su, am* are regularly dropped after neuter consonant bases, with no residual effect on their stems (A 7.1.23 [495]). In order to derive *asthi* from *asthan-s, asthan-am,* then, one would have to provide specially that the replacement of *-an* by *-in* takes effect even after the endings have been deleted. Positing a base *asthin* does not involve such difficulties. On the other hand, there is no parallel for replacing the *-i-* of *-in* with *-a-* before vocalic endings like *ṭā.* The operations which apply to a set of masculine bases including *pathin* (767) do not afford a true parallel: *pathā* and so on exhibit a stem form *path-*, not *pathan-*. Since the set of bases with forms as in (355) are all neuter and the type *vāri* involves introducing an augment to give a stem type *vārin-* before vocalic endings, it is best to derive the forms in (355) from a base *asthi* whose *-i* is replaced by *-an* before vowel-initial endings of the third through seventh triplets (A 7.1.75 [470]).

781 (356) a. *pitṛbhyām pitṛbhiḥ pitṛbhyas pitṛṣu* b. *pitṝn pitṝṇām* c. *pitrā pitre pitroḥ* d. *pitaḥ pitarau*

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pitaras pitaram pitari e. *pituḥ* f. *pitā*

(356a-c) clearly support positing a base *pitṛ*, comparable to *pati* and *sakhi* (774, 778). The vocative singular *pitaḥ* (< *pitar*) and other forms in (356d) moreover, are like *pate* and so on. These too, then, should be accounted for by guṇa substitution, only this replacement now takes effect in a broader domain, including the locative singular (see A 7.3.110 [484]). Special rules are now required to derive *pituḥ* from *pitṛ-as* by way of *pitur* and *pitā* from *pitṛ-s* (see A 6.1.111, 7.1.94 [534, 471]). Just as *sakhā* is derived from *sakhi-s* by replacing the *-i* of the stem with *-an* (778), so is *pitā* derived by letting *-an* substitute for the *-ṛ* of *pitṛ-* before *su*. The feminine type *mātṛ* 'mother' inflects in the same way as the type *pitṛ* except that the *-s* of *śas* is not replaced by *-n* after such a base: *mātṝs*.

There is another type of *-ṛ-*stem, with *-ār-* instead of *-ar-* in forms comparable to *pitarau pitaraḥ pitaram*; for example: *kartārau kartāraḥ kartāram, svasārau svasāraḥ svasāram* from *kartṛ-* and *svasṛ-*. Given that this type also has forms with *-ar*, such as *kartar, svasar* (voc. sg.) and *kartari, svasari* (loc. sg.), it is simplest to let guṇa substitution apply to give *kartar-* and then to let the penultimate vowel of this stem be replaced by *-ā-* (A 6.4.11 [469]).

782 (357) a. *tisṛbhiḥ tisṛbhyaḥ tisṛṇām tisṛṣu* b. *tisraḥ*

(358) a. *catasṛbhiḥ catasṛbhyaḥ catasṛṇām catasṛṣu*

b. *catasraḥ*

(357a) and (358a) clearly exhibit feminine stems *tisṛ-* and *catasṛ-*, which differ from the feminine type *mātṛ-* (781) in having short *-ṛ-* instead of *-ṝ-* before *-nām* (A 6.4.4 [468]). In addition, the *-ṛ* of these stems is not subject to guṇa substitution before the vowels of *jas* and *śas*; instead, it is replaced by *-r* (A 7.2.100 [475]).

Masculine and neuter forms corresponding to those in (357)-(358) are from the bases *tri, catur* (770, 777, 779). Moreover, *tri-* and *catur-* occur as first members of compounds, regardless of the gender in question. Accordingly,

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tri and *catur* are posited as the bases, and *tisṛ-*, *catasṛ-* are allowed to replace these in the feminine (A 7.2.99 [486]).

783 (359) a. *nauḥ naubhyām naubhiḥ naubhyaḥ nauṣu*
b. *nāvau nāvaḥ nāvam nāvā nāve nāvaḥ nāvoḥ nāvām nāvi*

There is a general phonological rule whereby *āv* occurs before vowels instead of *au* (A 6.1.78 [524]), so that *nau* 'boat' is posited as the base to account for (359). Similarly, *go* 'cow, bull' is posited to derive

(360) a. *gobhyām gobhiḥ gobhyaḥ goḥ goṣu* b. *gavā gave gavoḥ gavām gavi* c. *gauḥ gāvau gāvaḥ* d. *gām gāḥ*

For the same general phonological rule accounts for *gav-* before vowels instead of *go-*; found before consonant-initial endings of (360a), and *goḥ* is derivable from *go-as* (endings *ñasi, ñas*) in the same way that *dhenoḥ, vāyoḥ* are derived from *dheno-as, vāyo-as* (775-776). On the other hand, (360c) requires a stem *gau-*; so that a special rule is needed, whereby vṛddhi substitution applies to *go* before sarvanāmasthāna endings (see A 7.1.90 [511]). This has a parallel in the derivation of *sakhāyau* and other forms of *sakhi* (778). In addition, a particular rule is required to account for *gām* and *gās* from *go-am* and *go-as* (A 6.1.93 [530]).

The bases *go, nau* also have variants *-gu, -nu,* as in *citra-gu* 'some one who has spotted cows', *ati-nu* 'one that has gone beyond the boat'. As can be seen from examples like *adhi-stri* 'concerning women', with *-stri* instead of *strī,* the variants *-gu* and *-nu* are to be accounted for by short-vowel substitution (A 1.2.47-48 (459, 322).

(361) a. *rāyau rāyaḥ rāyam rāyā rāye rāyaḥ rāyoḥ rāyām rāyi* b. *rāḥ rābhyām rābhiḥ rābhyaḥ rāsu*

shows a stem *rāy-* in contexts where (359b) has *nāv-*. In addition, *ati-ri* has *-ri* in a compound type where one finds the variant *-nu.* These facts speak for positing a base *rai* 'wealth'. In order to account for *rā-* as in (361b), then, a special rule is needed whereby *-ā* replaces the vowel of *rai-*

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before consonants (see A 7.2.85 [474]): *rai-s* (ending *su*) > *rās* and so on.

784 Consider now stems in *-a* and *-ā*. The first type is illustrated by

(362) a. *devaḥ deva devasya* b. *devābhyām devāya devānām* c. *devam* d. *devāḥ devān* e. *devau devena devaiḥ devāt* f. *devebhyaḥ devayoḥ deve deveṣu*

devaḥ, devasya clearly consist of a stem *deva-* with the endings *s, sya,* and the vocative *deva* consists of this stem alone (see (267) [717]). The forms in (362b) are then accounted for by lengthening the *-a* of *deva-* before the endings in question (A 7.3.102, 6.4.3 [482, 468]). *devam* can be derived from *deva-am,* just as *patim, matim, agnim, vāyum* are derived from *pati-am, mati-am, agni-am, vāyu-am* (724, 774-776). Similarly, as *patīn* is derived from *pati-as* by way of *patīs,* so can *devān* be derived from *deva-as* (ending *śas*) by way of *devās* (see 722 F). The nominative plural *devāḥ* is derived from *deva-as* (ending *jas*). Given a basic stem *deva-* abstracted from such forms, *devau, devais, devena, deve, devāt* are accounted for on the basis of general phonological rules applied to *deva-au, deva-ais* (A 6.1.88 [529]), *deva-ina, deva-i* (A 6.1.87 [528]), *deva-āt* (A 6.1.101 [532]). In the same way, a general phonological rule accounts for the pronominal type *sarve* (< *sarva-ī*: A 7.1.17 [492]) and the neuter dual type *phale* (< *phala-ī*: A 7.1.19 [493]). Having stem-final *-a* replaced by *-e* (A 7.3.103-104 [482]) accounts directly for *devebhyas, deveṣu,* as well as the pronominal type *sarveṣām,* and indirectly for *devayos* (< *deve-os*). Finally, the neuter type *phalāni* is derived in the same general manner as *vārīṇi, madhūni* (779): the augment *num* is added to the stem before the ending *śi* (A 7.1.72 [488]), and the penultimate vowel of the augmented stem is then replaced by a long vowel (A 6.4.8 [469]): *phala-i* > *phalan-i* > *phalāni.*

Finally, let us consider stems in *-ā*:

(363) a. *ajā ajāḥ ajām ajābhyām ajābhiḥ ajāyai*

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ajābhyaḥ ajāyāḥ ajānām ajāyām ajāsu b. *aje*
c. *aje ajayā ajayoḥ*

(363a) justifies abstracting a stem *ajā-*: *ajā* < *ajā-s* (A 6.1.68 [404, 467]), *ajās* < *ajā-as* (A 6.1.102 [532]), *ajām* < *ajā-am* (A 6.1.107 [533]), and so on. The dual *aje*, then, is to be derived from *ajā-ī* (A 6.1.87 [528]), with the endings *śī* (see A 7.1.18 [493]). Once *ajā-* is abstracted as the basic variant, forms in (363c) require rules whereby *-ā* is replaced by *e* (A 7.3.105-106 [483]). Stems like *ajā-* generally have vocative singulars of the type *aje*.

Although *ambā-* otherwise behaves in the same manner as such *-ā-* stems, it has a corresponding vocative *amba*, which requires a special rule (A 7.3.107) replacing *-ā* with short *-a*.

785 Pāṇini thus posits, for reasons I have pointed out, particular basic forms to account for the sets of related forms discussed above. In turn, some of these are more primitive than others. For example, *deva* is a nominal base, *devī-* a basic stem form with a feminine affix; *tri* is a nominal base, but *tiṣṛ-* is a replacement for the stem *tri-* in the feminine.

Remarks.

786 1. It is clear from what I have shown that Pāṇini accounts for certain forms of given bases by allowing operations to apply that result in what amount to basic forms of other types. For example, substituting *-an* for the *-ṛ* of *piṭṛ-* in *piṭṛ-s* gives *pitan-s*, with a stem of the type *rājan-* (see 781). The forms derived from *pitan-s* and *rājan-s* are of the same type: *pitā, rājā*. There are also limits to such channelling, determined by observable patterns. Consider again, for example, how Pāṇini derives *kartā kartārau kartāraḥ kartāram* and *sakhā sakhāyau sakhāyaḥ sakhāyam* (781, 778). *kartā* and *sakhā* are derived similarly: The final vowels of the stems are replaced by *-an* before the ending *su* to give *kartan-s, sakhan-s*. To obtain the stem form *kartār-*, Pāṇini

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first lets guṇa substitution apply in *kartṛ-* to give *kartar-*, the penultimate vowel of which is then replaced by *-ā-*. On the other hand, *sakhāy-* is derived differently: vṛddhi substitution applies in *sakhi-* to give *sakhai*, then *-ai-* is replaced by *-āy-* before vowels. One might ask why *sakhāy-* is not accounted for in the same manner as *kartār-*, by replacing the *-i* of *sakhi-* with the guṇa vowel *-e*, letting this undergo replacement by *-ay*, and then letting *-ā-* substitute for the penultimate *-a-* of *sakhay-*. One would then have two parallel pairs: *pitaraḥ* : *kartāraḥ* :: *agnayaḥ* : *sakhāyaḥ*. However, there is no thorough parallelism to which one could appeal to justify this procedure. Certainly, *sakhāyau, sakhāyam* and *agnī agnim* differ totally. The fact is that *sakhi* is a unique base. For this very reason, it is not advisable to derive the type *kartār-* by having vṛddhi replacement apply in *kartṛ-*, as in *sakhi-*. Given this, together with the fact that there is also a base *rai*, Pāṇini's procedure is understandable and justifiable.

787 2. Although there is no conclusive evidence to prove the point, it is at least plausible to consider that Pāṇini took under consideration such possibilities as I have pointed out in 786 and rejected some in favor of others on the basis of such reasons as I have given. It is certainly true that Indian grammarians are not unanimous in the way they account for the facts. Thus, Pāṇini's way of accounting for the types discussed in 785 is followed by most but not by all later grammarians. Hemacandra simply has *-ār* substitute for the *-ṛ* of stems like *kartṛ-* before endings which are called *sarvanāmasthāna* in Pāṇini's system and he calls *ghuṭ*. [Hem. 1.4.38: तृस्वसृनप्तृनेष्टृत्वष्टृक्षत्तृहोतृपोतृप्रशास्त्रो घुटचार्।] Additional data from non-Pāṇinian grammars concerning this issue are treated in 'Indian grammarians on vowel alternations in Sanskrit', appearing in the Ramakrishna Gopal Bhandarkar 150th birth anniversary special number of *Annals of the Bhandarkar Oriental Research Institute* (Pune).

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4.2.5. Basic forms of verbs.

788 Consider now the following sets:

(364) a. *cinoti* (3sg. pres.) b. *cetum* (inf.) c. *cayana* (nt. action noun: nom.-acc. sg. *cayanam*) d. *cita* (past ptcple.: nom. sg. masc. *citaḥ*) e. *cāyayati* (3sg. pres. caus.)

(365) a. *sunoti* b. *sotum* c. *savana* d. *suta* e. *sāvayati*

By the procedure outlined in Section 4.1, the items in (364) can be analyzed as follows:

cinoti: a verbal base *ci* 'gather, heap' followed by the affix *-no-* and the ending *ti*

cetum: a stem *ce-* and the suffix *tum*

cayana: a stem *cay-* and the suffix *ana*

cita-: a stem *ci-* and the suffix *ta*

cāyayati: a stem *cāy-ay-* with an affix *-a-* and the ending *ti*.

cāy-ay- itself consists of the stem *cāy-* and an affix *-ay-*.

The items in (365) contain the stems *su-*, *so-*, *sāv-* with the same affixes. Since there is a general phonological rule whereby *ay av āy āv* replace *e o ai au* before vowels (A 6.1.78 [524]), *cay-* and *sav-* can be derived from *ce-* and *so-*. Similarly, *cāy-* is derivable from *cai-*, as in *acaiṣīt* (3sg. aor.). Moroever, although there is no comparable preconsonantal variant *sau-* (3sg. aor. *asāvīt*), patterning justifies letting *sāv-* also derive from *sau-* before a vowel.

789 b-d of the sets

(366) a. *nayati* b. *netum* c. *nayana* d. *nīta* e. *nāyayati* 'lead, guide'

(367) a. *cyavate* ('moves, shakes' [intr.]) b. *cyotum* c. *cyavana* d. *cyuta* e. *cyāvayati* ('moves, shakes' [tr.])

(368) a. *bhavati* b. *bhavitum* c. *bhavana* d. *bhūta* e. *bhāvayati*

obviously contain the same affixes as the equivalent items of (364)-(365), and *nay-*, *cyav-*, *bhav-* are again to to considered

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phonologically conditioned variants of base forms with *-e* and *-o*: *ne-*, *cyo-*, *bho-*. Although *bho-* does not actually occur, one is justified in positing it on the basis of patterning. Recall also that *itum* is best treated as an augmented variant of *tum* (690-693).

790 In accordance with what I pointed out earlier (697), of the variants *ci ce, su so, nī ne, cyu cyo,* and *bhū bho,* the first member of each pair should be considered basic, the other derived. The vowels *-e -o* are then gotten as replacements for *-i -ī* and *-u -ū* in particular grammatical contexts: *tum* (*tumun*), *ana* (*lyuṭ*), and *a* (*śap*), the last in (366a)-(368a), are affixes before which *-i -ī -u -ū* of verbs are replaced by the guṇa vowels *e o* (A 7.3.84 [127]); *no* (*śnu*) and *ta* (*kta*), on the other hand, are suffixes before which this substitution does not apply (A 1.1.5, 1.2.4 [98, 513]). The suffix *a* (*śa*) that follows the base in *dhīyati* of the set

(369) a. *dhīyati* b. *dhetum* c. *dhayana* d. *dhita*
e. *dhāyayati*

also does not condition guṇa replacement. Instead, the vowel of *dhī-* 'hold' is replaced by *-iy* (A 6.4.77 [452]).

791 (370) a. *harati* b. *hartum* c. *haraṇa* d. *hṛta*
e. *hārayati*

In accordance with what has been said, *hṛ* 'take' is to be considered the basic variant, and (370a-c) are to be derived through guṇa substitution. The guṇa replacement for *ṛ*, however, is *a* followed by *r* (A 1.1.51 [93]), so that there can be no variation comparable to the one seen in *ce cay, so sav.* The set

(371) a. *paṭhati* b. *paṭhitum* c. *paṭhana* d. *paṭhita*
e. *pāṭhayati* 'recite, read'

has *paṭh-* in contexts where bases with *-i- -ī -u -ū -ṛ* have different forms, with *-i, -e,* and so on. This is not merely a function of its ending in a consonant but of its having penultimate *-a-*, for which there is no distinct guṇa substitute (cf. A 1.1.2 [9]). Penultimate *-i-* and *-u-* of bases are subject to distinctive guṇa replacement:

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(372) a. *kṣipati* b. *kṣeptum* c. *kṣepaṇa* d. *kṣipta* e. *kṣepayati*

(373) a. *nudati* b. *nottum* c. *nodana* d. *nutta* e. *nodayati*

have *kṣip-*, *kṣep-* 'throw' and *nud-*, *nod-* 'push, remove' in items where (371) has only *paṭh-* 'read, recite, study'; see also **798**.

792 Let us now return to (364e)-(369e) *cāyayati, sāvayati, nāyayati, cyāvayati, bhāvayati, dhāyayati*. These have in common a meaning absent from other members of their sets: They mean 'cause ... to A', and the values of A are the meanings attributable to the bases *ci* 'gather, heap' and so on in (364)-(369). In addition, these causative forms share affixes. They all have *-a-* before an ending, a predesinential suffix found also in (366a)-(368a). In addition, however, there is an affix *-ay-* before *-a-*; and this affix is itself preceded by the base forms *cāy-*; *sāv-*; *nāy-*; *cyāy-*; *bhāv-*; *dhāy-*. By the procedure sketched in section **4.1**, *-ay-* is abstracted as an affix associated with a meaning common to all members of the set in question: causation. What is more, given that (364e)-(369e) are semantically more complex than (364a)-(369a), it is licit to treat the former as derivative with respect to the latter. Thus, *nāyay-*; *cyāvay-*; and *bhāvay-* are stem forms of derived verbs, followed by *-a-* and *-ti-* just as the primitive stems *nay-*; *cyav-*; and *bhav-* precede these suffixes. Now, as these are phonologically conditioned variants of *ne-*; *cyo-*; and *bho-*; so are *nāyay-*; *cyāvay-*; and *bhāvay-* phonologically conditioned variants of *nāye-*; *cyāve-*; *bhāve-*; and as the *-e, -o* of *ne-*; *cyo-* result from guṇa substitution before the affix *-a-* (*śap*), so is the *-e* of *nāye-*; *cyāve-*; *bhāve-* properly treated as resulting from guṇa substitution before the same suffix. The causative affix contained in these derived bases is thus *-i-* (*ṇic*: **A** 3.1.26 [281]). This affix itself conditions substitutions in bases that precede it: *nāy-i-*; *cyāv-i-*; *bhāv-i-*. A vowel always follows *nāy-*; *cyāv-*; *bhāv-* in these derivates, so that these base forms are appropriately treated as phonologically

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conditioned variants of *nai-*, *cyau-*, *bhau-*. That is, the causative suffix *-i-* is a context for replacing *-i -ī -u -ū* with the vṛddhi vowels *ai au* (see A 7.2.115 [417]). Before the same suffix, *-ṛ* is replaced by the vṛddhi vowel *-ā*, automatically followed by *r*, as in *hār-ay-* of (370e) *hārayati*. In addition, penultimate *-a-* of a base undergoes vṛddhi substitution before the causative suffix (A 7.2.116), as in *pāṭh-i-* of (371e) *pāṭhayati*. On the other hand, penultimate *-i-* and *-u-* of verbs are subject only to guṇa replacement before this affix: (372e) *kṣepayati*, (373e) *nodayati*. Moreover, this applies only to light penultimate vowels of unaugmented stems, as can be seen from

(374) a. *jīvati* b. *jīvitum* c. *jīvana* d. *jīvita*
e. *jīvayati*

The vowel of *jīv-* 'live' is not subject to guṇa or vṛddhi substitution.

793 Consider now

(375) a. *karoti* b. *kartum* c. *karaṇa* d. *kṛta*
e. *kārayati*

(376) a. *kirati* b. *karitum / kaṛītum* c. *karaṇa*
d. *kīrṇa* e. *kārayati*

(375) is similar to (370) (791) and justifies posity a base *kṛ* 'do, make' to account for the forms in question. (376c,e) are homophonous with (375c,e), but, as can be seen from (376b,d), this does not immediately warrant positing for (376) too a base *kṛ* subject to guṇa and vṛddhi substitution. Third person active perfect forms corresponding to (375) and (376) also show differences: *cakāra cakratuḥ cakruḥ* from the base of (375) but *cakāra cakaratuḥ cakaruḥ* from the base of (376). *cakāra* can, of course, be derived from *kṛ*, with vṛddhi replacement conditioned by the ending *a* (*ṇal*). Just as clearly, however, *cakratus, cakrus,* and *cakaratus, cakarus* cannot be derived from the same source. The forms from the base of (375) are immediately derivable from *kṛ-atus* and *kṛ-us*, with semivowel replacement (A 6.1.77 [125]), but *cakaratus, cakarus* cannot be derived from the same forms without contradiction. Again, the passives *kriyate* and *kīryate* have

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different forms before the same suffix (*yak*). Clearly, it will not do to posit a base *kṛ* to derive the forms of (376).

794 (376a) *kirati* contains the accented affix *-a-* (*śa*) found also in (369a) *dhiyati,* (372a) *kṣipati,* (373a) *nudati* (790- 791). There is, then, a distribution of forms in (376) as follows: *kar-* before affixes that condition guṇa substitution, *kār-* before affixes that condition vṛddhi replacement, *kir-* and *kīr-*, respectively, before vowel-initial and consonant-initial affixes which do not condition guṇa or vṛddhi replacement.

Other bases conform to the same pattern; for example:

(377) a. *girati* b. *garitum / garītum* c. *garaṇa*
d. *gīrṇa* e. *gārayati*

(378) a. *jīryati* b. *jaritum / jarītum* c. *jaraṇa*
d. *jīrṇa* e. *jārayati*

One might consider positing basic *kir* 'spread, strew', *gir* 'swallow', *jir* 'age, decay' to account for these. And there is a parallel for prevocalic *-ir-* paired with preconsonantal *-īr-*: *gīḥ girau giraḥ giram girau giraḥ girā gire giraḥ giroḥ girām* : *gīrbhyām gīrbhiḥ gīrbhyaḥ gīrṣu* 'speech, voice'. Nevertheless, this is not an acceptable possibility. No form of the noun *gir* has *-ar* or *-ār*; so that this base does not offer an exact parallel. More importantly, positing basic *kir* and so on would require special rules for obtaining base forms with *-ar*, *-ār* through substitutions which have no parallels. To be sure, deriving (336b) *panthānau* and so on (767) involves replacing the *-i-* of *pathin-* with *-a-*, but this does not afford a good parallel. After all, verbal base forms with *-ar* and *-ār* have their closest analogs in nominal bases of the types *pitṛ* and *kartṛ* (781). Moreover, if *stir* 'strew, spread' were posited as the base for

(379) a. *stṛṇāti* b. *staritum / starītum* c. *staraṇa*
d. *stīrṇa* e. *stārayati*

one would also have to provide that *-ir* is replaced by *-ṛ* in deriving *stṛṇāti,* which is without parallel. If one is to avoid substitution rules for which there is no good systematic support, then, *kir*, *gir*, *jir*, *stir* cannot be posited as the bases

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for (376)-(379).

Of the variants that do occur, one is left with those that end in *-ar* and *-ār*. But these too can hardly be treated as basic, since they occur precisely in contexts that condition guṇa and vṛddhi replacement, which points to bases ending in *ṛ*-vowels. Nevertheless, it is not possible merely to posit *kṛ*, *gṛ*, *jṛ*, and *stṛ*, since the bases in question do not behave in exactly the same manner as do bases of the type (375) *kṛ*.

795 Nor is it possible for Pāṇini to gather together in his dhātupāṭha all bases like those of (376)-(379) within a single group for which particular operations are provided. *kirati* and *girati* contain the affix *-a-* found in the type *tudati* (A 3.1.77 [157]); *jīryati* has the suffix *-ya-* that occurs in the type *dīvyati* (A 3.1.69); and *stṛṇāti* contains the affix *nā* seen in the type *krīṇāti* (A 3.1.81). In order to have these affixes introduced after the bases in question, then, Pāṇini has to assign them to different major groups in his dhātupāṭha.

796 Another way has to be found, then, to distinguish bases like those in (376)-(379) from ordinary bases in *-ṛ*, such as *kṛ*. In this connection, let us now consider *cicīṣa*, *didhīṣa*, *susūṣa*, *cucyūṣa*, *ninīṣa*, and *bubhūṣa*, desideratives of the bases *ci*, *dhi*, *su*, *nī*, *bhū*. As one can see, the suffix *-sa-* (*san*: A 3.1.7 [279]) not augmented with *iṭ* requires long vowels even for verbs with basic short vowels, so that a rule is to be provided whereby final vowels of verbs are replaced by corresponding long vowels before the desiderative suffix *-sa-* (A 6.4.16 [422]). Given that *i u ṛ* are all subject to guṇa substitution, one would expect that lengthening apply also to *-ṛ* before *-sa-*, as it does to *-i* and *-u*. But the desiderative suffix is not preceded by *-ṛ*. Instead, one has *-īr*, as in *jihīrṣa*, *cikīrṣa*, desideratives formed from *hṛ*, *kṛ*. In addition, note that the suffix *-nā-* (*śnā*) of *stṛṇāti* in some instances follows short vowels that have to be considered replacements for basic long vowels. Thus,

(380) a. *punāti* b. *pavitum* c. *pavana* d. *pūta*
e. *pāvayati*

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shows forms comparable to (368b-e) *bhavitum, bhavana, bhūta, bhāvayati* (789), so that (380) calls for positing a base *pū* 'purify' Similarly, the base for

(381) a. *lunāti* b. *lavitum* c. *lavana* d. *lūna*
e. *lāvayati*

is *lū* 'cut'.

Systematic considerations thus indicate that base-final *-ir* before consonants be treated as a reflex of *-ṝ*, and that *stṛ-* of (379a) *stṛṇāti* can properly be accounted for as a replacement for *stṝ-*, with vowel shortening, as in *punāti* and *lunāti* (A 7.3.80 [424]). In brief, two kinds of verbal bases can be posited: some with short *-ṛ*, such as *hṛ* and *kṛ*; others with long *-ṝ*, such as *kṝ*, *gṝ*, *jṝ*, and *stṝ*. Pāṇini does posit both these types. In his system, *-ṝ* of a verbal stem is generally replaced by *-ir*, but *-ur* substitutes for this after a labial (see A 7.1.100, 102 [423]), and penultimate *-i-*, *-u-* of a base in *-r* is replaced by a long vowel before consonants and at pada boundaries (see A 8.2.76-78 [552]). The first replacements apply before affixes that do not condition guṇa or vṛddhi substitution, contexts in which bases with *-ṛ* have *-ṛ* before consonants in general, *-rī* or *-ri* before certain affix with initial *y-* (see A 7.4.27-28 [427]), and *-r* before vowels. The *-ṝ* of a subset of bases is replaced by short *-ṛ* before the suffix *śnā*. The affix *ta* (*kta*) of *hṛta, kṛta,* and so on does not condition guṇa replacement, so that *-ṝ* is replaced by *-ir* before this suffix: *kir-ta, gir-ta, jir-ta,* and *stir-ta,* whence *kīrṇa* etc.: *kir-ta* > *kir-na* (A 8.2.42 [549]) > *kīr-na-* (A 8.2.77) > *kīrṇa* (A 8.4.1 [570]).

797 (382) a. *vartate* b. *vartitum* c. *vartana* d. *vṛtta*
e. *vartayati*

shows the pattern expected of a base *vṛt* 'occur, be', with *vart-* gotten by guṇa substitution. On the other hand,

(383) a. *kīrtayati* b. *kīrtayitum* c. *kīrtana*
d. *kīrtita* e. *kīrtayati*

has *kīrt-* throughout, just as *jīvati* and so on of (374) (792) have only *jīv-*. Since base-final *-ṝ* is replaced by *-ir*, with

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subsequent lengthening to give *-ir* before consonants, this suggests that the base of (383) should be *kṛt* 'tell, narrate, glorify': *kṛt-* › ... *kīrt-* (A 8.2.78 [552]). Penultimate *-ṛ-* is not subject to guṇa substitution, just as penultimate *-ī-* in an unaugmented verbal base is not subject to this replacement.

798 There are thus good grounds for positing verbal bases with both final and internal *i ī u ū ṛ ṝ*, subject to replacement by guṇa and vṛddhi vowels in particular grammatical contexts. Not every guṇa or vṛddhi vowel in a base, however, must result from such substitution. Consider, for example:

(384) a. *ceṣṭate* b. *ceṣṭitum* c. *ceṣṭana* d. *ceṣṭita*
e. *ceṣṭayati*

(385) a. *ḍhaukate* b. *ḍhaukitum* c. *ḍhaukana*
d. *ḍhaukita* e. *ḍhaukayati*

These show *ceṣṭ-* and *ḍhauk-* throughout, and there is no systematic reason to suppose basic forms *ciṣṭ, ḍhuk*. Indeed, *ciṣṭ* would not account for forms with *ceṣṭ-* before affixes that condition guṇa substitution, since the *-i-* of this supposed base is neither light nor penultimate. If the base were *ciṣṭ*, one would expect **ciṣṭate*, **ciṣṭitum*, and so on, as one has

(386) a. *bhikṣate* b. *bhikṣitum* c. *bhikṣaṇa*
d. *bhikṣita* e. *bhikṣayati*

from *bhikṣ* 'beg'. Accordingly, one must posit *ceṣṭ* 'be active, strive' and *ḍhauk* 'approach' with basic guṇa and vṛddhi vowels.

Similarly,

(387) a. *tvarate* b. *tvaritum* c. *tvaraṇa* d. *tvarita*
e. *tvārayati*

has *tvar-* not only in contexts where a base like (375) *kṛ* has *-ar* (793) but also where such a base has *-ṛ*, so that there is no justification for positing *tvṛ* and having *tvar-* result from guṇa replacement. The verb to be posited here is simply *tvar* 'hasten, rush', comparable to (371) *paṭh* (791) or *śak* 'be able', as in

(388) a. *śaknoti* b. *śaktum* c. *śakana* d. *śakta*
e. *śākayati*

On the other hand, the causative *tvari* differs from *pāṭhi*, so

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that special provision has to be made for the short vowel in this derivate (see 184, 188-189).

799 Not only is it necessary to recognize verbs like *ceṣṭ*, with basic *e*, it is also necessary to recognize *e* as a replacement for *a* in contexts which do not regularly condition guṇa substitution. For example, consider the third person active perfect forms of *kṣip, nud* (791), *kṛ, kṝ* (793), *smṛ* 'remember', *paṭh, śak*. The ending *-a* (*ṇal*) conditions guṇa and vṛddhi substitution (A 7.3.86, 7.2.115-116 [127, 417]), as can be seen from *cikṣepa, nunoda, cakāra, cakāra, sasmāra, papāṭha*, and *śaśāka*. On the other hand, *atus* and *us* do not regularly condition such replacements (A 1.2.5 [514]): *cikṣipatuḥ cikṣipuḥ, nunudatuḥ nunuduḥ, cakratuḥ cakruḥ*. To be sure, *sasmaratuḥ sasmaruḥ* and *cakaratuḥ cakaruḥ* do show guṇa replacement before these endings, but this is the case for stems with *-ṛ-* vowels which have particular properties: verbs with *-ṛ* preceded by a cluster and verbs with *-ṝ* (A 7.4.10-11 [418]). The corresponding forms of *paṭh* and *śak* are *papāṭha peṭhatuḥ peṭhuḥ* and *śaśāka śekatuḥ śekuḥ*. Patently, the forms with *-e-* should not be derived through any sort of guṇa substitution. On the contrary, these call for a special rule replacing *-a-* of bases with *-e-* and simultaneously dropping abhyāsa syllables (A 6.4.120 [458]).

800 The forms in

(389) a. *atti* b. *attum* c. *adana* [d. *anna* 'food']
e. *ādayati*

clearly are to be derived from a base *ad* 'eat', with initial *a-*. Similarly, *asti asi asmi* have a base form *as* 'be'. The corresponding dual and plural forms, however, differ from those of *ad* in that one has here a base form *s-*, without *a-*: *staḥ sthaḥ svaḥ, santi stha smaḥ* contrast with *attaḥ atthaḥ advaḥ, adanti attha admaḥ*. One could consider, then, positing either *as* or *s* as basic.

Under the first alternative, the *a-* of *as-* is dropped before endings like *tas* (see A 6.4.111 [456]). On the other hand, if *s* is accepted as the basic form, *asti* and so on have to

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be derived by introducing an augment *a-* to the verb before endings such as *tip*. In addition, the imperfect *āsīt āstām āsan, āsīḥ āstam āsta, āsam āsva āsma* would now be derived by introducing the augment *ā-* to *s*. This augment and initial vowels of verbs, moreover, combine to give vṛddhi vowels (A 6.1.90 [529]), as in *aikṣata* 'looked', *aihata* 'strived', imperfects corresponding to the presents *īkṣate, īhate*. Note, however, that this special augment (*āṭ* : A 6.4.72 [238]) regularly occurs with vowel-initial bases, so that letting it occur with *s* to derive *āsīt* and so on has no systematic support. Nor will it do to cite the type *krīṇāti krīṇanti*, with *-nā-* and *-n-* as a possible parallel for adding the augment *ā-* to *s*. The putative augment of *-nā-* would have to be an alternant to another augment, *-ī-*, in forms like *krīṇītaḥ*, so that this could not really afford any parallel for the proposed procedure. In effect, *-nā-* and *-nī-* are best treated in the same manner as *-ā* and *-ī* of verbs with basic *-ā*, of the type (400) *mā* (803). Moreover, if *as* is posited as the base, not only does adding the augment *āṭ* to derive *āsīt* and so on fit in with what is proper to vowel-initial verbs, it is also true that dropping *a-* to account for forms like *staḥ* and *santi* also has an exact parallel: The distribution of *-na-* and *-n-* (*śnam*: A 3.1.78 [157]) in *runaddhi runddhaḥ rundhanti, runatsi runddhaḥ runddha, runadhmi rundhvaḥ rundhmaḥ* is precisely like that of *as-* and *s-* in *asti staḥ santi* and so on. It is preferable on systematic grounds, then, to posit *as* and account for *s* by deleting the *a-* of this base (A 6.4.111); see also 824.

801 As there are bases like (387) *tvar*, (388) *śak*, and (389) *ad* (798-800), with basic *a*, so are there bases with non-final *ā* that should not be treated as a replacement. For example,

(390) a. *ślāghate* b. *ślāghitum* c. *ślāghana* d. *ślāghita* e. *ślāghayati*

(391) a. *rādhnoti* b. *rāddhum* c. *rādhana* d. *rāddha* e. *rādhayati*

(392) a. *āpnoti* b. *āptum* c. *āpana* d. *āpta* e. *āpayati*

have *ā* everywhere, including forms whose affixes certainly do

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not condition vṛddhi replacement. Accordingly, *ślāgh* 'praise', *rādh* 'succeed', *āp* 'reach, obtain' are to be posited as basic forms. The desiderative *īpsa,* then, requires special rules to replace *ā* with *ī* and to drop the abhyāsa syllable generally called for in a derivate with *san* (A 7.4.55, 58 [436]).

802 There are also bases with final *-ā.* For example,

(393) a. *yāti* b. *yātum* c. *yāna* d. *yāta* e. *yāpayati*

obviously contains *yā* 'go, travel', augmented with *-p* in the causative (A 7.3.36 [124]). The following bear obvious similarities to (393):

(394) a. *jighrati* b. *ghrātum* c. *ghrāṇa*
d. *ghrāṇa / ghrāta* e. *ghrāpayati*

(395) a. *dhamati* b. *dhmātum* c. *dhmāna* d. *dhmāta*
e. *dhmāpayati*

These contain, then, *ghrā* 'smell' and *dhmā* 'blow'. However, in addition to *ghrāyāt, dhmāyāt,* one has also *ghreyāt, dhmeyāt,* and *ghrī-, dhmī-* occur in *jeghrīyate, dedhmīyate.* Nevertheless, the domains of the stems *ghre-, dhme-* and *ghrī-, -dhmī-* are so restricted that one should posit basic *ghrā, dhmā* and account for variants with *-e* and *-ī* through substitution for *-ā* in particular contexts (see A 6.4.68, 7.4.31 [451, 428]). Similarly, the base forms in (394a), (395a) are to be accounted for by substitution (A 7.3.78 [437]). The similarity between the intensives of the bases in (394)-(395) and *nenīyate* does not suffice to warrant positing basic *ghrī* and *dhmī,* comparable to (366) *nī* (789).

803 There are also bases with variants in *-ā -e -ī* which differ from (394) *ghrā* and (395) *dhmā* in that the base forms with *-ī* occur not only in forms equivalent to *jeghrīyate* and *dedhmīyate* but also in forms equivalent to (394d) and (395d). Thus, b,c,e of

(396) a. *pibati* b. *pātum* c. *pāna* d. *pīta* e. *pāyayati*

(397) a. *jahāti* b. *hātum* c. *hāna* d. *hīna* e. *hāpayati*

are like b,c,e of (394)-395), and *peyāt, heyāt* are like *ghreyāt, dhmeyāt,* but *pīta, hīna* differ from *ghrāṇa / ghrāta, dhmāta.* Similarly, although *pepīyate* and *jehīyate* are comparable to

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jeghrīyate and *dedhmīyate*, the passives *pīyate, hīyate* differ from *ghrāyate, dhmāyate*. Given the wider scope of the variants *pī-* and *hī-*, one might consider positing these as basic forms and accounting for *pātum, pāna,* and so on by having *-ī* in a subgroup of verbs be replaced by *-ā* before affixes which generally condition guṇa substitution. This will not do, however, for the desiderative *pipāsati,* since the suffix *san* does not normally condition guṇa substitution for bases in *-ī,* as can be seen from *ninīṣati* (cf. **A** 1.2.9 [515]). Nor would it do to have guṇa substitution account for *peyāt, heyāt,* because the affix in question also does not determine guṇa substitution (cf. **A** 3.4.104 [401]). On the contrary, the similarities between (396)-(397) and (394)-(395) make it more proper to consider that the bases of (396)-(397) are *pā* 'drink', *hā* 'leave, abandon'.

Similarly, it is difficult to justify positing *sthi, dhi,* and *mi,* comparable to (364) *ci* (788), in order to account for

(398) a. *tiṣṭhati* b. *sthātum* c. *sthāna* d. *sthita*
e. *sthāpayati*

(399) a. *dadhāti* b. *dhātum* c. *dhāna* d. *hita*
e. *dhāpayati*

(400) a. *mimīte* b. *mātum* c. *māna* d. *mita*
e. *māpayati*

On the contrary, Pāṇini is justified in positing basic *sthā* 'be in place, remain, stand', *dhā* 'place, make', *mā* 'measure' and providing that *-i* substitutes for the *-ā* of the verbs *sthā, mā* when these occur before affixes in *t-* that are marked with *k,* before which *hi-* replaces *dhā-* (**A** 7.4.40, 42 [429, 438]). The *-e* of *stheyāt, dheyāt, meyāt* is accounted for by the same rule that serves to replace the *-ā* of *pā* in *peyāt* (see **A** 6.4.67 [451]), and the rule by which *-ī* substitutes for *-ā* to account for *pī-* in *pīyate* accounts also for *sthī-, dhī-, mī-* in *sthīyate, dhīyate, mīyate* (**A** 6.4.66).

The language Pāṇini describes thus requires him to posit three groups of bases in *-ā*: some simply with invariant *-ā*; others with variants in *-e, -ī*; and still others with variants

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in *-e, -ī,* and *-i.* All such bases have variants with no vowel at all (A 6.4.64), as in the perfect forms *yayatuḥ yayuḥ, jaghratuḥ jaghruḥ, dadhmatuḥ dadhmuḥ, papatuḥ papuḥ, jahatuḥ jahuḥ, tasthatuḥ tasthuḥ, dadhatuḥ dadhuḥ,* and *mamāte mamire,* with the endings *atus, us* (3du., pl. act.) and *āte, ire* (3du., pl. mid.).

804 a-d of the sets

(401) a. *jayati* b. *jetum* c. *jayana* d. *jita*
e. *jāpayati*

(402) a. *adhīte* b. *adhyetum* c. *adhyayana* d. *adhīta*
e. *adhyāpayati*

(403) a. *krīṇāti* b. *kretum* c. *krayaṇa* d. *krīta*
e. *krāpayati*

warrant setting up bases *ji* 'conquer, be victorious', *i* (*adhi-i* 'study, learn'), and *krī* 'buy'. *jita, krīta* are like (398d) *sthita,* (396d) *pīta* (803), and the causatives *jāpayati, krāpayati* are comparable to *sthāpayati.* Nevertheless, (401b,c) and (403b,c) are not like the equivalent forms of *sthā* and *pā* On the contrary, b-d of (401), (403) are precisely like forms of bases in *-i, ī,* such as (364) *ci* and (366) *nī* (788-789). It is accordingly justifiable to posit *ji, i, krī* as the bases and to have *-ā* replace the vowels of these verbs in deriving their causatives (A 6.1.48 [392]).

805 Consider now

(404) a. *līyate* b. *letum/ lātum* c. *layana/ lāna*
d. *līna* e. *lāyayati/ lāpayati*

(405) a. *dīyate* b. *dātum* c. *dāna* d. *dīna* e. *dāpayati*

(406) a. *minoti* b. *mātum* c. *māna* d. *mita* e. *māpayati*

(407) a. *mīnāti* b. *mātum* c. *māna* d. *mīta* e. *māpayati*

(404a) *līyate* has a high-pitched base vowel and a suffix *-ya-*; so that it is to be classed as a present form of the type *dīvyati,* with the affix *śyan* (A 3.1.69 [157]) following *lī-*: (404b,c,e) *letum, layana, lāyayati* are like (366b,c,e) *netum, nayana, nāyayati,* from the base *nī* (789), and *līna* (see 189(c)) has a stem *lī-*. Moreover, the desiderative *lilīṣate* and the perfect forms *lilyāte, lilyire* clearly differ from *pipāsati* and

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mamāte, mamire (803). Accordingly, the variants with *lā-, lāp-* in (404b,c,e) do not warrant positing basic *lā* comparable to *pā*. Instead, the basic form to be posited is *lī* 'adhere, cling', the vowel of which is optionally replaced by *-ā* instead of *-e* in contexts that regularly determine guṇa substitution (A 6.1.51 [392]). (405) has *dī-* and *dā-* in the same contexts where (404) has *lī-* and *lā-*; except that *dā-* does not alternate with *de-*; and the desiderative of the verb in question is *didīṣate*. Hence, *dī* 'diminish, perish' is to be considered the basic variant, with *dā-* gotten through substitution before suffixes that usually condition guṇa substitution (A 6.1.50). By the same token, the bases for (406), (407) are *mī* 'set, build' (desid. *mimīṣati*) and *mī* 'deceive, change, harm' (desid. *mimīṣati*).

806 b-e of the sets

(408) a. *dhyāyati* b. *dhyātum* c. *dhyāna* d. *dhyāta* e. *dhyāpayati*

(409) a. *gāyati* b. *gātum* c. *gāna* d. *gīta* e. *gāpayati*

(410) a. *dhayati* b. *dhātum* c. *dhāna* d. *dhīta* e. *dhāpayati*

are patently similar to forms of bases in *-ā*, as are the precative forms *dhyāyāt / dhyeyāt, geyāt, dheyāt*, the desideratives *didhyāsati, jigāsati*, and the perfect forms *dadhyatuḥ dadhyuḥ, jagatuḥ jaguḥ, dadhatuḥ dadhuḥ* (see 802-803). (408a)-(410a), on the other hand, are not so easily accounted starting from basic *dhyā, gā, dhā*. Thus, (410a) *dháyati*, (408a) *dhyáyati*, and (409a) *gáyati* are immediately derivable from *dhé-a-ti, dhyai-a-ti*, and *gai-a-ti* (A 6.1.78 [524]), with the affix *śap* (A 3.1.68 [157]), but there is no parallel for replacing basic *-ā* with *-e* or *-ai* before this suffix. Of course, (408a) and (409a) could be considered to have the suffix *śyan* (A 3.1.69). Still, given that (409b-e) and (410b-e) are exactly comparable, it would make sense to treat (409a) and (410a) in the same manner. But (410a) obviously cannot contain *śyan* following a stem *dhā-*. Moreover, the derived nominal bases *-jighra, -dhama, -piba, -dhaya* clearly

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have the base forms found in (394a) *jighrati,* (395a) *dhamati,* (396a) *pibati* (802-803), (410a) *dhayati,* and none of the first three could possibly be considered to contain a suffix *-ya-*. It is reasonable to say that, as *-piba* and so on have a suffix *-a-* (*śa*: A 3.1.137 [290]), so also does *-dhaya*. Parallelism therefore speaks for saying that *dhāyati* too has *-a-* (*śap*) after the base, so that this is to be derived from *dhé-a-ti*. Parallelism also speaks for deriving *gāyati* from *gai-a-ti,* with the same suffix.

There is, then, a problem: (408b-e)-(410b-e) are obviously accounted for starting with bases in *-ā,* but one cannot derive (408a)-(410a) satisfactorily in the same way. Pāṇini's solution is as follows. He posits bases in *-ai, -e*: *dhyai* 'think, meditate', *gai* 'sing', *dhe* (*dheṭ*) 'suck'. He also provides that base-final *-e -o -ai -au* which occur in verbs as they are taught, before they have entered into operations whereby these vowels could result from substitutions, are replaced by *-ā,* but not when an affix marked with *ś* follows such a base (A 6.1.45 [392]). The *-ā* thus gotten is then subject to operations that apply also to verbs with primitive *-ā*. This recognizes that, in terms of major operations, bases like those of (408)-(410) have to be treated as ending with *-ā*.

807 (411) a. *dyati* b. *dātum* c. *dāna* d. *dita* e. *dāpayati*

(412) a. *syati* b. *sātum* c. *sāna* d. *sita* e. *sāyayati*

also have forms that are like those of bases with *-ā,* in particular, the type (398) *sthā* (803); *deyāt seyāt, didāsati siṣāsati, dadatuḥ daduḥ, sasatuḥ sasuḥ* also follow this pattern. Suppose that *dyati* and *syati* were derived from *dā-a-ti* and *sā-a-ti,* with the suffix *-a-* (*śa*) of the type *tudati* (A 3.1.77 [157]). This affix does not condition guṇa substitution (A 1.2.4 [513]), just as *-ta-* (*kta*) of participles such as *dita* and *sita* does not determine such replacement. One could, then, have *-a-* in *dā-a-ti* and *sā-a-ti* condition the replacement of *-ā* by *-i*. This will not do, however. For, as (369a) *dhiyati* (790) derives from *dhi-a-ti* with the suffix *śa,* so would *di-a-ti, si-a-ti* give **diyati, *siyati* unless special

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provision were made, not only to preclude such forms but to allow for *chyati* 'cuts', *śyati* 'sharpens' and so on, instead of comparable undesirable forms. Thus, *dyati, syati* and other forms of this type are best derived with the suffix *śyan*.

Of course, this then involves dropping a base vowel before this suffix. Pāṇini accounts for verbs of the type (411)-(412) by positing bases with primitive *-o* (*do* 'cut', *ṣo* 'terminate, conclude'), subject to replacement by *-ā* in the same way that *-ā* substitutes for *-e* and *-ai* in the bases posited for (408)-(410) (806). Moreover, since the substitution does not apply if a base occurs before a suffix marked with *ś*, Pāṇini cannot have *-o* replaced by *-ā* before *śyan*. Instead, *-o* is dropped before this affix (A 7.3.71 [424]).

808 The sets

(413) a. *pacati* b. *paktum* c. *pacana* d. *pakva*
e. *pācayati*

(414) a. *yajati* b. *yaṣṭum* c. *yajana* d. *iṣṭa*
e. *yājayati*

are similar in some important respects. As shown in 792, the *-ā-* in causatives like (371e) *pāṭhayati* (791) is to be accounted for through vṛddhi substitution, so that *-ā-* replaces basic *-a-* in *paṭh*. The *-ā-* of *pācayati, yājayati* should be explained in the same way, and this applies also for the *-ā-* in sigmatic aorist forms like *apākṣīt, ayākṣīt,* and in *pāka* 'cooking', *yāga* 'sacrificial rite' (A 7.2.3, 116 [412, 417]). Thus, *pacati, pakṣyati* (3sg. fut.), *paktum, pacana* : *apākṣīt, pācayati, pāka* and *yajati, yakṣyati, yaṣṭum, yajana* : *ayākṣīt, yājayati, yāga* agree with respect to base vocalism. But *pakva* and *iṣṭa* have different base vocalisms, as do the passives *pacyate* and *ijyate*. The verb of (414) has a variant that verbs of the type (371) *paṭh,* (413) *pac* do not have. Similarly,

(415) a. *svapiti* b. *svaptum* c. *svapana* d. *supta*
e. *svāpayati*

has *svap, svāp,* and *sup* comparable to *yaj, yāj,* and *ij*. It is patent that *sup* does not belong to a set which patterns like (373) *nud* (791). Similarly, although *supta* and *supyate* are

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like *iṣṭa* and *iṣyate, svaptum, svapana,* and *svāpayati* clearly differ from *eṣṭum / eṣitum, eṣaṇa,* and *eṣayati,* which are properly derived from a base *iṣ* 'wish, desire'. In addition, consider the following.

(416) a. *vayati* b. *vātum* c. *vāna* d. *uta* e. *vāyayati*

shows the pattern of a base in *-e,* such as (410) *dhe* (**806**). However, *uta* has a base form *u-*; and *ūyate, ūyāt* have *ū-* in contexts where this long vowel is to be derived from *u-* (see **A** 7.4.25 [**426**]). If, despite the differences between forms of *iṣ* and the base in (414), one wished to posit basic *ij,* one would then also posit *u* as the base for (416). A rule inserting *-a-* to give *yaj* could be considered to account for *yajati, yāj-i* (< *yaj-i*), and so on, but such a rule would not suffice to take care of (416) and related forms. Hence, positing *ij* and *sup* as the bases for (414)-(415) is not to be recommended. It is preferable to proceed differently.

Recall (see **768-769**) that the stem forms *śun-*; *viduṣ-* (< *vidus-*) in (337), (339) are to be accounted for through samprasāraṇa substitition, starting with basic *śvan-* and *vidvas-*. Similarly, Pāṇini posits basic *yaj* 'venerate, perform a rite, officiate at a sacrificial rite', *svap* 'sleep, dream', *ve* 'weave' to derive (414)-(416), and provides that samprasāraṇa replacement applies to these bases before certain affixes (see **A** 6.1.15-16 [**388**]).

Similarly, *prach* 'ask' is posited to account for

(417) a. *pṛcchati* b. *praṣṭum* c. *pracchana* d. *pṛṣṭa* e. *pracchayati*

and related forms such as *prakṣyati* (3sg. fut., see **818**), *papraccha* (3sg. pfct.), *aprākṣīt* (3sg. aor.), *prcchyate.*

809 Some forms in the set

(418) a. *paśyati* b. *draṣṭum* c. *darśana* d. *dṛṣṭa* e. *darśayati*

could also be derived through samprasāraṇa substitution applied to a base *draś,* related suppletively with *paśya* (see **A** 7.3.78 [**437**]); similarly, *drakṣyati, adrākṣīt, dṛśyate* could be derived from *draś* (see **817**) in the same way that *prakṣyati*

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and so on are derived from *prach* (808). However, the parallel is not complete: *darśayati* is comparable to causatives like (382e) *vartayati* (797), with the usual guṇa replacement for *ṛ*; and the perfect *dadarśa* also is comparable to the type *vavarta*, not to *papraccha*. In addition, although *adrākṣīt* is like *aprākṣīt*, the verb of (418) has an alternative aorist *adarśat*.

There is thus a choice to be made, between positing *dṛś* or considering *draś* to be the base. If the latter alternative is adopted, a special operation is needed to account for *darś-*. Conversely, if *dṛś* is treated as basic, a special rule is required to provide for *draś-*, whence *drāś-* by vṛddhi replacement. The same question arises with respect to the base of

(419) a. *sṛjati* b. *sraṣṭum* c. *sarjana* d. *sṛṣṭa* e. *sarjayati*

and related forms like *srakṣyati, sasarja, asrākṣīt, sṛjyate*.

Other data indicate that it is preferable to posits *dṛś* 'see, look' and *sṛj* 'let loose, create'. Consider now

(420) a. *tṛpyati* b. *tarptum / tarpitum / traptum* c. *tarpaṇa* d. *tṛpta* e. *tarpayati*

trap- occurs only before consonant-initial affixes which condition guṇa substitution, as in (420b) and *trapsyati*, but each such form has an alternant with *tarp-*, as in (420b) and *tarpsyati / tarpiṣyati*. Moreover, the base of (420) is one of a set of verbs such that ārdhadhātuka affixes following them optionally take the initial augment *iṭ* (see A 7.2.45 [150]), so that there are sets of equivalent forms such as (420b) and *tarpsyati / tarpiṣyati / trapsyati*. It is thus the case that *tarp-* occurs everywhere that *trap-* does, though the converse is not true. The domains of these variants indicate, then, that *tarp-* is to be given preference over *trap-*. In addition, *tarp-* is accounted for through the usual guṇa substitution, so that a base *tṛp* 'be pleased, satisfied' is to be posited. Since *trap-* and *draś-*, *sraj-* have similar domains, one should also posit basic *dṛś, sṛj*. Pāṇini does. He obtains *draś-*, *sraj-*, *trap-* by

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providing that *-a-* (*am*) is inserted as an augment after the vowels of *dṛś, sṛj, tṛp,* optionally for the last (see A 6.1.58-59 [393]).

810 Let us now consider

(421) a. *siñcati* b. *sektum* c. *secana* d. *sikta*
e. *secayati*

(422) a. *muñcati* b. *moktum* c. *mocana* d. *mukta*
e. *mocayati*

(423) a. *vindati* b. *vettum* c. *vedana* d. *vitta*
e. *vedayati*

All forms except the first in each set contain bases without nasals. Accordingly, one should posit *sic* 'pour, irrigate, sprinkle', *muc* 'loose, release', *vid* 'find' and provide not only for guṇa substitution to apply in grammatical contexts where it applies also to other verbs, such as (372) *kṣip* and (373) *nud* (791), but also for the addition of a nasal segment when the bases occur with the suffix *-a-* (*śa*) of *siñcati, muñcati, vindati.*

This nasal could be either *n* or *m.* Both of these are replaced by *ṁ* in pada-interior position before consonants other than semivowels and nasals, with ultimate replacement of *ṁ* by a stop homogeneous with one that follows (A 8.3.24, 8.4.58 [559, 580]). In connection with this, consider the following groups of third person forms: *riṇakti riṅktaḥ riñcanti, riṅkte riñcāte riñcate* 'leave behind'; *yunakti yuṅktaḥ yuñjanti, yuṅkte yuñjāte yuñjate* 'connect, join, yoke'; *bhunakti bhuṅktaḥ bhuñjanti* 'protect', *bhuṅkte bhuñjāte bhuñjate* 'enjoy, eat'; *bhinatti bhinttaḥ bhindanti, bhintte bhindāte bhindate* 'split, break'; *ruṇaddhi runddhaḥ rundhanti, runddhe rundhāte rundhate* 'hold in'; *pinaṣṭi piṁṣṭaḥ piṁṣanti* 'grind'. Here also different nasal segments occur within stems. Moreover, there is a clear pattern: *-na-*, the nasal of which is subject to replacement by *-ṇ-*, and *-n-* occur in distinct grammatical contexts. In addition, *bhindanti* and the passive *bhidyate* are like *vindanti* and *vidyate.* It is clearly preferable to consider that the nasal segment introduced to

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derive (421a)-(423a) be *-n-* (A 7.1.59 [439]).

811 There are sets in which forms with nasal segments are more widespread. For example,

(424) a. *dhvaṁsate* b. *dhvaṁsitum* c. *dhvaṁsana* d. *dhvasta* e. *dhvaṁsayati*

(425) a. *aṇakti* b. *aṅktum* c. *añjana* d. *akta* e. *añjayati*

(426) a. *unatti* b. *unditum* c. *undana* d. *unna / utta* e. *undayati*

The broad domain of forms with nasal segments in the base speaks against positing *dhvas, aj, ud* and adding a nasal augment in particular contexts. Thus, stems with nasal segments occur in contexts that call for either guṇa or vṛddhi substitution, as in b,c,e of (424)-(426) and in forms such as the futures *dhvaṁsiṣyate, aṅkṣyati / añjiṣyati, undiṣyati,* and the aorists *adhvaṁsiṣṭa, āñjīt, aundīt.* Accordingly, it is proper to posit *dhvans* 'be lost, perish', *anj* 'smear, anoint', *und* 'wet' and let the penultimate *-n-* of such bases be deleted before affixes that do not condition guṇa or vṛddhi replacement (see A 6.4.24 [446]). *anakti* and *unatti,* then, are derived from *anj-ti* and *und-ti.*

One could consider inserting an augment *-a-* to get *anaj-ti* and *unad-ti,* but there is no systematic parallel for this procedure in comparable forms. Paṇini accounts for such forms as follows. The bases *anj, und* are included in the major group of verbs beginning with *rudh,* so that *śnam* is introduced as an infixed affix to these verbs when they occur with agentive sārvadhātuka affixes (A 3.1.78 [157]): *a-na-nj-ti, u-na-n-d-ti.* The *-n-* of the bases is then deleted (A 6.4.23 [446]): *ananj-ti* > *anaj-ti* > ... *anakti, unand-ti* > *unad-ti* > *unatti.*

812 There are still other sets, in which all forms have stems with internal nasals; for example:

(427) a. *krandati* b. *kranditum* c. *krandana* d. *krandita* e. *krandayati*

(428) a. *kāṅkṣati* b. *kāṅkṣitum* c. *kāṅkṣaṇa* d. *kāṅkṣita* e. *kāṅkṣayati*

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It is, therefore, proper to posit *krand* 'cry' and *kāṅkṣ* 'desire'. It is also necessary, however, to distinguish such bases from others, like (424) *dhvaṅs*, (425) *anj*, and (426) *und* (811). It will not do, moreover, to posit for (427)-(428) bases with original *-m-*. For

(429) a. *dhanvati* b. *dhanvitum* c. *dhanvana* d. *dhanvita* e. *dhanvayati* 'run'

is of the same type, and there is no way, short of an ad hoc rule, to have *-n-* replace base-interior *-m-* before *-v-*.

Pāṇini distinguishes bases of the two types as follows. He posits some bases simply with penultimate *-n-*; for example, *dhvaṅs, anj, und*. In addition, he posits bases without such a nasal but specially marked, with *i*, and then provides (A 7.1.58 [439]) that verbs so marked receive an augment *-n-* (*num*) unconditionally. Penultimate *-n-* is deleted only in bases which have not been marked with *i*.

813 There are also bases with final nasals subject to deletion. For example:

(430) a. *namati* b. *nantum* c. *namana* d. *nata* e. *namayati*

(431) a. *gacchati* b. *gantum* c. *gamana* d. *gata* e. *gamayati*

(432) a. *tanoti* b. *tanitum* c. *tanana* d. *tata* e. *tānayati*

obviously contain forms of bases *nam* 'bend, bow', *gam* 'go', and *tan* 'stretch', the final nasals of which are dropped before affixes like *kta*, which in Pāṇini's system are marked with *k* or *ṅi* (see A 6.4.37 [448]).

Consider now

(433) a. *krāmati* b. *kramitum* c. *kramaṇa* d. *krānta* e. *kramayati*

(434) a. *sāmyati* b. *śamitum* c. *śamana* d. *śānta* e. *śamayati*

These sets also obviously involve bases with nasals: *kram* 'stride' and *śam* 'become calm, peaceful', but the *-m* of these verbs is not dropped before *kta*. A distinction thus has to be

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made between bases of this type and others, like those of (430)-(432).

Note that in (430a) *nantum* and *naṁsyati* (3sg. fut.) the suffixes *tum* and *sya* are not augmented with *iṭ*, but that they are so augmented in the comparable forms of (433) *kram* and (434) *śam*: *kramitum, kramiṣyati, śamitum, śamiṣyati*. In addition, recall that some bases after which ārdhadhātuka affixes are not regularly augmented with *iṭ* nevertheless do condition this augment in specific instances. One such base is *gam*: *gantum* and *gaṁsyate* have unaugmented suffixes, but *gamiṣyati* contains augmented *-iṣya-* (A 7.2.58 [149]). So far as (430)-(431) are concerned, then, the final nasal of a base is dropped if it generally does not condition augmenting with *iṭ*. In Pāṇini's system, such verbs have low-pitched base vowels (see A 7.2.10 [146]). Now, (432) *tan* does not conform to this, as can be seen from *tanitum, taniṣyati*. Nevertheless, *tan* is part of a group of bases which have similar characteristics, including the absence of final nasals before affixes like *kta*. Pāṇini thus provides (A 6.4.37) for deleting final nasals not only in verbs taught with low-pitched base vowels but also in bases of the subgroup that begins with *tan*. Other bases with final nasals, such as (433) *kram* and (434) *śam*, have their penultimate vowels replaced by long vowels before affixes like *kta* (A 6.4.15 [422]).

814 (435) a. *khanati* b. *khanitum* c. *khanana* d. *khāta*
e. *khanayati*
(436) a. *jāyate* b. *janitum* c. *janana* d. *jāta*
e. *janayati*

also show bases with final nasals: *khan* 'dig' *jan* 'come into being, be born', and these are similar to (433) *kram* and (434) *śam* in that they condition augmenting with *iṭ* for suffixes. They are not exactly like *khan* and *śam*, however, as can be seen from (435d) *khāta*, (436d) *jāta* and *khāyate, jāyate* (of the type *āsyate*: (9), A 1.3.13, 3.4.69 [138, 232]), which alternate with *khanyate, janyate*. The corresponding forms of *kram* and *śam* are *krānta, śānta, kramyate, śamyate*. *khā-, jā-*

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are accounted for by having *ā* substitute for the final consonants of *khan-* and *jan-* before affixes marked with *k* or *ñ* and letting this replacement apply optionally before *y-* of an affix (A 6.4.42-43 [448]). *jā-* of (436a) *jāyate* 'is born', on the other hand, is provided for by a special rule (see A 7.3.79 [437]) which lets *jā-* replace *jan-* before *śyan*.

815 (437) a. *dīvyati* b. *devitum* c. *devana* d. *dyūta*
e. *devayati*
(438) a. *sīvyati* b. *sevitum* c. *sevana* d. *syūta*
e. *sevayati*

are best accounted for by positing bases of the type (372) *kṣip* (791): *div* 'gamble' and *siv* 'sew', as in the perfect forms *didivatuḥ, sisivatuḥ*. Positing *dīv, sīv*, of the type (374) *jīv* (792), would not only require a short-vowel replacement to account for *div-* and *siv-* in such forms but would also not immediately provide for *dev-, sev-* in forms such as b,c,e of (437)-(438), since penultimate *-ī-* of an unaugmented base does not regularly undergo guṇa substitution. The *-ī-* of *dīvyati, sīvyati*, then, is to be gotten by replacement (A 8.2.77 [552]). In addition, *dyū-* and *syū-*, as in *syūta* and *dyūta*, require replacing *-v* of the bases with *-ū* (A 6.4.19 [430]).

816 The *ṣ-* of *-ṣya-* in *śakṣyati*, from (388) *śak* (798) is accounted for by retroflexion after *-k-* (A 8.3.59 [563]). In addition, *-c* is replaced by a velar before consonants other than semivowels and nasals (A 8.2.30 [544]). After *pak-, sek-, mok-* thus gotten from the bases (413) *pac*, (421) *sic*, and (422) *muc* (808, 810), the *s-* of *-sya-* then undergoes retroflexion: *pakṣyati, sekṣyati, mokṣyati*.

Consider now

(439) a. *dveṣṭi* b. *dveṣṭum* c. *dveṣaṇa* d. *dviṣṭa*
e. *dveṣayati*

All the base forms here have *-ṣ*. On the other hand, *advikṣat* (3sg. aor.), *dvekṣi* (2sg. pres.), *dvekṣyati* have base forms with *-k*, which appears only before *-ṣ-* (< *-s-*). Given the domains of the variants, it is proper to posit a base *dviṣ* 'hate', whose *-ṣ* is replaced by *-k* before *s-* of an affix (see A 8.2.41 [548]).

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817 (440) a. *viśati* b. *veṣṭum* c. *veśana* d. *viṣṭa*
e. *veśayati*

are also forms of a base with a variant in *-k* before *ṣ-*: *avikṣat, vekṣyati*. Since (440b,d) also have base forms with *-ṣ*, moreover, one can derive *avikṣat* and so on by having the same operation which replaces the *-ṣ* of a base with *-k*, as in *advikṣat* (817) apply here too. Nevertheless, (440a) *viśati*, (440e) *veśayati*, and *viśyāt* (3sg. prec.) contain base forms with *-ś*, not *-ṣ*. And it is precisely before pada-interior vowels and semivowels that consonant-final bases show no phonological replacements; cf. *pacati, pacyate*; *asicat, sicyate*; *dveṣaṇa*. Consequently, it is best to posit a base *viś* 'enter' and to let its final consonant undergo replacement by *-ṣ* before nonnasal stops and spirants and in pada-final position (A 8.2.36 [544]). Similarly, the *-ś* of (418) *dṛś* (809) is replaced by *-ṣ* in deriving *drakṣyati* and so on.

(441) a. *vaṣṭi* b. *vaśitum* c. *vaśana* d. *uśita*
e. *vāśayati*

also is accounted for with a base in *-ś*: *vaś* 'desire'. In addition, this base is subject to samprasāraṇa substitution before affixes marked with *k* or *ñ* (see A 6.1.16 [388]), as in (441d) *uśita, uṣṭaḥ* (3du. pres.) *uśanti* (3pl.), and so on.

818 Replacement by *-ṣ* does not apply only to *-ś* of verbs. It must apply also to some palatal stops. For example, (414a,c) *yajati, yajana* (808), *ijyate* have *yaj-* and *ij-* but (414b,d) *yaṣṭum, iṣṭa* have *yaṣ-* and *iṣ-*. Similarly,

(442) a. *mārṣṭi* b. *mārṣṭum* c. *mārjana* d. *mṛṣṭa*
e. *mārjayati*

derive from *mṛj* 'wipe, clean (see A 7.2.114 [415]), but *-ṣ* appears in (442d) *mṛṣṭa* and *mṛṣṭaḥ* etc. The *-j* of *yaj, mṛj* is replaced by *-ṣ* in the contexts where *-ṣ* substitutes for *-ś* (A 8.2.36 [544]). The same replacement applies also to the *-ch* of (417) *prach* (808), as in *praṣṭum, pṛṣṭa*.

819 The base of

(443) a. *vṛścati* b. *vraścana* c. *vraṣṭum* d. *vṛkṇa*
e. *vraścayati*

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and related forms such as the future *vraścişyati*, the aorist *avraścīt*, and the passive *vṛścyate* is clearly of the type (417) *prach*, with *-ra-* subject to samprasāraṇa substitution. In addition, (443c) *vraṣṭum* is comparable to (414b) *yaṣṭum* and (417b) *praṣṭum*. As the palatals of these bases are replaced by *-ṣ*, then, this substitution will account for *vraṣ-* from a more basic form with *-c*. This does not, however, take care of all that must be accounted for, since the *-ś-* in *vraśc-* and *vṛśc-* of other forms is absent. Recall, nevertheless, that a rule is required whereby *-k-* is deleted if it is the first consonant of a cluster followed by a consonant other than a semivowel or nasal (A 8.2.29 [543]), as in *taṣṭa* from *takṣ-ta* (cf. *takṣaṇa*). In a comparable manner, *-s-* can be deleted if it is the first consonant of a cluster in the same contexts. In addition, *s* contiguous to a palatal stop is replaced by *ś* (A 8.4.40 [574]), so that *vraśc* can be derived from *vrasc*, the basic form Pāṇini posits. See also 825.

820 In pada-final position, *-ṣ* is replaced by *-ḍ*, subject to replacement by *-ṭ*, as in (209) *tviḍ*/ *tviṭ*(701); similarly, there are imperfect forms *adveṭ, avaṭ, amārṭ*, which correspond to (439a) *dveṣṭi*, (441a) *vaṣṭi*, and (442a) *mārṣṭi* (816-818).

Consider now

(444) a. *leḍhi* b. *leḍhum* c. *lehana* d. *līḍha* e. *lehayati*

For the same reasons that lead to positing *viś* as the base for (440) (817), one is led to adopting *lih* 'lick' as the base for (444); cf. also the passive *lihyate*. In addition, related forms, such as *lekṣyati, alikṣat* are like *dvekṣyati, advikṣat* and *vekṣyati, avikṣat*, so that one might consider a rule whereby *-ṣ* would replace the *-h* of *lih*. This will not do, however, given that (444a,b,d) *leḍhi, leḍhum, līḍha* do not match (439a,b,d) *dveṣṭi, dveṣṭum, dviṣṭa* or (440b,d) *veṣṭum, viṣṭa*. Now, *dveṣṭi, dveṣṭum*, and *dviṣṭa* clearly should be derived from *dviṣ-ti, dviṣ-tum*, and *dviṣ-ta*: The suffixes *ti* (*tip*), *tum* (*tumun*) condition guṇa substitution in stems, and the initial dental stops of these and *ta* (*kta*) is replaced by *ṭ* after *ṣ* (A 8.4.41 [574]). Similarly, *leḍhi, leḍhum, līḍha* should

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be derived from *lih-ti, lih-tum, lih-ta*. This requires replacing the base-final consonant by one after which the dental stop of the suffixes will undergo retroflexion. *aleṭ,* the imperfect corresponding to (444a) *leḍhi,* shows *-ṭ* (< *-ḍ*), so that the substitute should be a retroflex stop. Other evidence indicates that the replacement should also be an aspirated stop. Thus,

(445) a. *nahyati* b. *naddhum* c. *nahana* d. *naddha*
e. *nāhayati*

shows a base *nah* 'gird, bind' whose *-h* is replaced by a dental stop before a consonant other than a semivowel. In order that (445b,d) and related forms be appropriately accounted for, the substitute should be *-dh* (A 8.2.34 [544]). This is subject to deaspiration and devoicing (A 8.4.53, 55 [577-578]) and conditions the replacement of *t-* by *dh-* (A 8.2.40 [547]): *nah-sya-ti* > *nadh-sya-ti* > *nad-sya-ti* > *natsyati, nah-tum* > *nadh-tum* > *nadh-dhum* > *naddhum, nah-ta* > ... *naddha*. Therefore, it is justifiable to let the *-h* of *lih* be replaced by *-ḍh* (A 8.2.31 [544]), after which *-t-* is replaced by *-dh-*; subject to retroflexion: *leh-ti* > *leḍh-ti* > *leḍh-dhi* > *leḍh-ḍhi, leh-tum* > ... *leḍh-ḍhum, lih-ta* > ... *liḍh-ḍha*. Of course, other operations are necessary to account for the final forms in question. All that need be done to derive *leḍhi, leḍhum* from *leḍh-ḍhi, leḍh-ḍhum* is to delete one of the contiguous consonants *-ḍh-* (A 8.3.13 [556]). Now recall that sequences such as (234) *agnī rákṣāṃsi* ..., (235) ... *punā raktam* are accounted for by deleting *-r* before *r-* and replacing with a long vowel the vowel that originally precedes *-r* (705-706). Similarly, Pāṇini provides (A 6.3.111 [523]) that a long vowel substitutes for one originally followed by *ḍh* subject to deletion: *liḍh-ḍha* > *li-ḍha* > *līḍha*. Having provided that *-h* of bases like *lih* is replaced by *-ḍh* in pada-final position and before consonants other than semivowels and nasals, Pāṇini must also let *-k* substitute for *-ḍh* before *s-* of an affix in pada-interior position (A 8.2.41 [548]) in order to account for forms like *lekṣyati,* just as *-ṣ* must be replaced by *-k* in the same context to account for *dvekṣyati,* from (439) *dviṣ* (816).

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821 The bases of

(446) a. *dahati* b. *dagdhum* c. *dahana* d. *dagdha* e. *dāhayati*

(447) a. *dogdhi* b. *dogdhum* c. *dohana* d. *dugdha* e. *dohayati*

must, for reasons discussed already, be posited as *dah* 'burn' and *duh* 'milk'. (446b,d) and (447b,d) show, however, that *-h* in such bases is to be replaced by *-gh* instead of *-ḍh* (A 8.2.32 [544]). In addition, there are verbs whose *-h* replaced by either *-ḍh* or *-gh* (A 8.2.33), such as *druh* 'wish ill, wish to harm':

(448) a. *druhyati* b. *droḍhum / drogdhum* c. *drohaṇa* d. *drūḍha / drugdha* e. *drohayati*

822 The future forms *dhakṣyati, dhokṣyati, dhrokṣyati* (alternating with *drohiṣyati*), the imperfect *adhok,* and the aorists *adhākṣīt, adhukṣat,* from (446) *dah,* (447) *duh,* and (448) *druh,* have not only a final velar stop before affixal *-ṣ-* (< *s-*) but also a base-initial aspirated stop *dh-*, which appears also in the second plural middle aorist *adhugdhvam.* Similarly,

(449) a. *budhytate* b. *boddhum* c. *bodhana* d. *buddha* e. *bodhayati*

has *budh-*, *bodh-*, but *bhot-* occurs in the future *bhotsyate,* the precative *bhutsīṣṭa* has *bhut-*, and *abhuddhvam* shows *abhudh-*. Variants with initial aspirated and unaspirated stops also appear in nominal derivates of these verbs:

(450) a. *godhug / godhuk* b. *goduhā* c. *godhugbhiḥ* d. *godhukṣu* 'cow milker'

(451) a. *mitradhrug / mitradhruk* b. *mitradruhā* c. *mitradhrugbhiḥ* d. *mitradhrukṣu* 'violater of a friendship, one who wishes ill to a friend'

(452) a. *uṣarbhud / uṣarbhut* b. *uṣarbudhā* c. *uṣarbhudbhiḥ* d. *uṣarbhutsu* 'awakening at dawn'

For reasons discussed in 701, 703, 708, the bases posited for (209)-(210), (223), (238), (239)-(240) are *tviṣ, dviṣ, viś, vīrudh, vāc,* and *sraj. tviḍ / tviṭ, dviḍ / dviṭ, viḍ / viṭ, vīrud*

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/ vīrut, vāg / vāk, and *srag / srak* are accounted for through replacements. Similarly, the verbal bases in (413)-(414), (421)-(422), (439)-(440) are *pac, yaj, sic, muc, dviṣ, viś* (808, 810, 816-817). That is, the variants found before vowels, semivowels, and nasals within padas are to be considered basic. By the same token, *dah, duh, druh,* and *budh* 'awaken, be aware, perceive' are posited as the bases for (446)-(449).

Now, *godhug-*; *mitradhrug-*; *uṣarbhud-* of (450)-452) occur at pada-boundaries, including such boundaries between the bases and endings like *bhis, sup.* Similarly, *adhog / adhok,* the imperfect corresponding to *dogdhi,* has *-dhog* at a pada boundary. One might consider, then, letting a pada boundary occur before such affixes as *-sya-*. Forms like *dhokṣyati* would thus be accounted for in the same ways as *adhog / adhok.* However, this procedure cannot be adopted. If *sya* were treated as separated from its stem by a pada boundary, one would allow forms like **nansyati* instead of *naṁsyati* from (430) *nam* (813), since pada-final *-m* of a verb is regularly replaced by *-n* (A 8.2.64 [550]). Similarly, the desiderative of *nam* is *ninaṁsa,* not.**ninansa,* so that it is not licit to have a pada boundary before the desiderative suffix *sa* to account for a derivate like *bubhutsa.* Nor is it acceptable to posit a word boundary between bases and affixes to derive forms like *abhutsi, abhuddhvam.* The first singular aorist corresponding to *amaṁsta* 'thought' is *amaṁsi,* not **amansi,* which would be allowed if a word boundary were posted before *-s-* to account for *abhutsi.* Moreover, instead of *alikṣi,* this procedure would also allow **aliṭsi,* with *-ṭ* as in *abhraliṭsu* from *abhralih-* (see 756). By the same token, instead of *alīḍhvam,* one would allow **aliḍḍhvam* as second plural middle imperfect (< *alih-dhvam*) and aorist (< *alih-sa-dhvam*: A 7.3.73 [444]) forms of *lih.*

Accordingly, a special rule has to be formulated to account for *dhakṣyati* and so on. Not only is base-final *-h* replaced by aspirated stops at a pada boundary (A 8.2.31-34 [544]), the unaspirated stops of base syllables like *dagh-* thus

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gotten are replaced by the corresponding aspirated stops, and this applies also before *-s-* and *-dhv-* (A 8.2.37 [545]).

823 *asiṣṛjat* and *asiṣicat* are aorist forms related to the causatives (419e) *sarjayati* and (421e) *secayati* (809-810), from the bases *sṛj, sic*. In *asiṣṛjat, -ṣṛj-* follows *-sī-*; but in *asiṣicat* the same segment is followed by *-ṣic-*; with a retroflex spirant instead of a dental. That is, the *s-* of some verbs is subject to retroflex substitution after particular sounds and the *s-* of other verbs is exempt from such replacement. Clearly, the verbs in question have to be distinguished from others. It is not possible to do this, however, simply by setting up two subgroups of verbs in the dhātupāṭha. For example, *siṣeva* and *siṣeca* are perfects of (438) *siv* (815) and (421) *sic*. The *s-* of both verbs is replaced by *ṣ-* after *-i-*; but the bases must be assigned to different major groups in the dhātupāṭha, in order to allow for the different affixes in (438a) *sivyati* and (421a) *siñcati*. Hence, Pāṇini distinguishes such verbs by giving them different primitive forms. Some bases are taught with *ṣ-*; others with *s-*. The *ṣ-* of a verb is unconditionally replaced by *s-* (A 6.1.64 [135]), but *s-* which has replaced *ṣ-* is generally subject to retroflexion, from which primitive *s-* is exempt (see A 8.3.59 [563]). Similarly, in order to segregate them according to operations, Pāṇini lists some verbs with *ṇ-*, which is unconditionally replaced by *n-* (A 6.1.65 [135]), others with primitive *n-*.

Remarks.

824 1. As I have shown in 800, there are good reasons for Pāṇini's positing *as* instead of *s*. There is evidence that not all ancient Indian grammarians proceeded in the same way. In his vārttika on A 1.3.22, Kātyāyana notes that ātmanepada affixes are to be allowed after *sthā* used with the preverb *ā-ni* in the sense of accepting, adopting (आङः स्थः प्रतिज्ञाने). In his

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comments on this vārttika, Patañjali illustrates the usage with examples according to which some one adopts *s* as the verb instead of *as* and lets *a, ā* of forms like *asti, āsīt* be treated as augments or modifications (Bh. I.280.23-24: **अस्तिं सकारमातिष्ठते। आगमौ गुणवृद्धी आतिष्ठते। विकारौ गुणवृद्धी आतिष्ठते।**). Later commentators inform us that it was the grammarian Āpiśali who followed this procedure. See the paper referred to in 787.

825 2. As shown in 819, the regular past participle of *vrasc* is *vṛkṇa*. The dhātupāṭha as handed down lists the verb with a marker *o* (*ovrāscū*), showing that the *t-* of *kta* and *ktavatu* is replaced by *n-* after it (A 8.2.45 [549]). The derivation of *vṛkṇa* by Pāṇinian rules as received, however, is problematic. In accordance with A 8.2.1 (109), this derivation should proceed as follows: *vrasc-ta* > ... *vṛsc-ta* (A 6.1.16 [388]) > *vṛc-ta* (A 8.2.29 [543]) > *vṛṣ-ta* (A 8.2.36 [544]) > *vṛṣṇa* > **vṛṣṇa* (A 8.4.1 [570]). In order to allow for deriving *vṛkṇa*, Kātyāyana proposes (A 8.2.6 vt. 7: **निष्ठादेशः षत्वस्वरप्रत्ययेड्विधिषु।**) that A 8.2.45 not be suspended with respect to A 8.2.36, and later Pāṇinīyas accept this. That is, they accept that A 8.2.30 applies to give *vṛk-ta* (< *vṛc-ta*) and then disallow the suspension of A 8.2.45 with respect to A 8.2.36, so that the *-k* of *vṛk-ta* is not replaced by *-ṣ*. The procedure in question does not accord with what Pāṇini explicitly says. Moreover, this procedure assumes that A 8.2.30 would apply to replace the *-c* of *vṛc-* in *vṛc-ta* with *-k*, although A 8.2.36, as an exception to this general rule of velar substitution, should block its application. At present, I cannot add anything definitive to the issue and leave possible suggestions for the future.

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APPENDIX

I. The status and purposes of grammar.

826 Grammar (*vyākaraṇam*) is one of the vedāṅgas (lit. 'limbs of the Veda'), ancillaries which serve to maintain and allow the appropriate ritual applications of Vedic texts. There are six vedāṅgas: Metrics (*chandaḥ, chandovicitiḥ*), which supplies instruction on the metrical structures of mantras; kalpa, which gives instructions concerning Vedic rites and the proper use of Vedic texts at certain times in ritual performances; astrology (*jyotiṣam, jyotiṣām ayanam*), which allows one to know the proper times for performing ritual acts; nirukta, which serves to explain etymologically difficult words of Vedic texts; phonetics (*śikṣā*), which teaches the production of sounds and their correct pronunciation; grammar, which imparts knowledge of correct speech forms (see 827). These vedāṅgas are respectively said to be the feet, hands, eyes, ears, nose, and mouth or face of the Veda, and only one who has studied the Veda complete with all these members is said to be magnified in the world of Brahman. [E.g., PŚ (Rudraprasāda's edition) 41-42: **छन्दः पादौ तु वेदस्य हस्तौ कल्पोऽथ पठ्यते। ज्योतिषामयनं चक्षुर्निरुक्तं श्रोत्रमुच्यते॥ शिक्षा घ्राणं तु वेदस्य मुखं व्याकरणं स्मृतम्। तस्मात्साङ्गमधीत्यैव ब्रह्मलोके महीयते॥**] *mukham* refers not only to the face or mouth but also to the chief limb. Patañjali unequivocally asserts that grammar is the principal ancillary among the six vedāṅgas and that an effort made with respect to this bears fruit. [Bh. I.1.19-20: **प्रधानञ्च षट्स्वङ्गेषु व्याकरणम्। प्रधाने च कृतो यत्नः फलवान्भवति।**]

827 Pāṇini's grammar is said to be a śabdānuśāsana, a means of teaching correct speech forms (*śabda*). Thus, the opening of the Mahābhāṣya is **अथ शब्दानुशासनम्।** 'Now the śabdānuśāsana.' Patañjali explains that *atha* is used here in the

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sense of introduction (*adhikārārtha*): a particular śāstra, namely śabdānuśāsana, should be understood to be introduced. [Bh. I.1.2-3: **अथेत्ययं शब्दोऽधिकारार्थः प्रयुज्यते। शब्दानुशासनं शास्त्रमधिकृतं वेदितव्यम्।**] As Kaiyaṭa remarks, *śabdānuśāsana* is an etymologically analyzable name (*anvartham nāma* 'name in accordance with the meaning [of its components]') for grammar. [Pr. I.3: **व्याकरणस्य चेदमन्वर्थं नाम शब्दानुशासनमिति।**] Moreover, *śabda-* in *śabdānuśāsana* refers to correct (*sādhu*) speech forms. Indeed, elsewhere in the Mahābhāṣya Patañjali explicitly refers to Pāṇini's work as a *sādhvanuśāsana śāstra*. [Bh. I.39.14: ... **साध्वनुशासनेऽस्मिञ्शास्त्रे ...**] *śāstra* is a derivate formed from the verb *śās* 'instruct', from which *anuśāsana* also derives, with the uṇādi suffix *ṣṭran* (US 4.158: **सर्वधातुभ्यः ष्ट्रन्।** [*sarvadhātubhyaḥ ṣṭran*]). Pāṇini's work is thus a means of teaching (*anuśāsanam*) correct speech form (*śabdāṇām, sādhuśabdānām*). See also 845.

828 In the introductory section of the Mahābhāṣya, Patañjali considers the compelling reasons for a śabdānuśāsana (*śabdānuśāsanasya prayojanāni*), reasons for which grammar is to be studied (*adhyeyam vyākaraṇam*). Five reasons are given to begin with:

1. In order to preserve the Vedas (*rakṣārtham vedānām*): Only one who is is informed about deletion (*lopa* 'absence': A 1.1.60 [79]), augments (*āgama*: see 19), and sound modifications (*varṇavikāra*) will properly preserve the Vedas by virtue of understanding forms that are accounted for by means of these.

2. In order to carry out the contextual modification (*ūhaḥ*) of Vedic mantras required in the course of certain rituals. These mantras are not recited in the Veda with all gender distinctions and all endings, and they require at times to be modified by one who has undertaken a ritual act, in accordance

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with the context of the particular rite. One who does not know grammar (*avaiyākaraṇaḥ*) cannot modify the mantras as required.

3. There is a traditional injunction, that a Brāhmaṇa should study and know the Veda accompanied by its six ancillaries (*ṣaḍaṅgo vedaḥ*) as a duty (*dharmaḥ*), without regard to any immediate purpose, and grammar is the principal vedāṅga (see 826).

4. A Brāhmaṇa, whose proper vocation is teaching, must know correct speech forms in order to carry out this duty, and these cannot be known through any brief means except grammar, so that grammar is to be studied for the sake of brevity (*laghvartham*).

5. Finally, grammar is to be studied in order to eliminate possible ambiguities. Ritualists say one should offer a cow dedicated to Agni and Varuṇa, and the text in which this is said uses *sthūlapṛṣatīm* as a qualifier. There is a possible doubt about what kind of cow is meant, whether one which is big and spotted (*sthūlā cāsau pṛṣatī ca*) or one with big spots (*sthūlāni pṛṣanti yasyāḥ*). One who does not know grammar cannot determine from the accent that *sthūlapṛṣatīm* refers to one or the other: If the original accentuation of the first component of the compound is retained, *sthūlápṛṣatīm* is a bahuvrīhi compound referring to a cow with big spots, but if the final vowel of the compound is high-pitched, this is a tatpuruṣa that refers to a cow that is big and spotted (see A 6.1.223, 6.2.1 [602-603]). [Bh 1.1.14-2.2: **कानि पुनः शब्दानुशासनस्य प्रयोजनानि। रक्षोहागमलघ्वसन्देहाः प्रयोजनम्। रक्षार्थं वेदानामध्येयं व्याकरणम्। लोपागमवर्णविकारज्ञो हि सम्यग्वेदान्परिपालयिष्यति॥ ऊहः खल्वपि। न सर्वैर्लिङ्गैर्न सर्वाभिर्विभक्तिभिर्वेदे मन्त्रा निगदिताः। ते चावश्यं यज्ञगतेन यथायथं विपरिणमयितव्याः। तान्नावैयाकरणः शक्नोति यथा-**

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यथं विपरिणमयितुम्। तस्मादध्येयं व्याकरणम्॥ आगमः खल्वपि। ब्राह्मणेन निष्कारणो धर्मः षडङ्गो वेदोऽध्येयो ज्ञेय इति। प्रधानञ्च षट्स्वङ्गेषु व्याकरणम्। प्रधाने च कृतो यत्नः फलवान्भवति॥ लघ्वर्थञ्चाध्येयं व्याकरणम्। ब्राह्मणेनावश्यं शब्दा ज्ञेया इति। न चान्तरेण व्याकरणं लघुनोपायेन शब्दाः शक्या ज्ञातुम्॥ असन्देहार्थञ्चाध्येयं व्याकरणम्। याज्ञिकाः पठन्ति स्थूलपृषतीमाग्निवारुणीमनड्वाहीमालभेतेति। तस्यां सन्देहः स्थूला चासौ पृषती च स्थूलपृषती स्थूलानि पृषन्ति यस्याः सा स्थूलपृषतीति। तां नावैयाकरणः स्वरतोऽध्यवस्यति यदि पूर्वप्रकृतिस्वरत्वं ततो बहुव्रीहिः अथान्तोदात्तत्वं ततस्तत्पुरुष इति॥]

The Mahābhāṣya goes on to give additional reasons for studying grammar, and one of these is to avoid speaking like barbarians (*mlecchā mā bhūma* 'lest we be barbarians'). Patañjali alludes to a legend that the Asuras were vanquished after they said *he'layo he'layaḥ* in calling out to the gods as enemies. This call contains several possible faults (see Dīpikā 9.17-21, Pr. I.11-12, RaPr. I.41, Chāyā 29a), including the use of *l* instead of *r*: *alayaḥ* for *arayaḥ*. The statement that the Asuras were vanquished thus is considered to show that such barbaric usage is censurable. Hence, says Patañjali, a Brāhmaṇa should not use a barbarism (*na mlecchitavai*), that is, he should not use incorrect speech forms (*nāpabhāṣitavai*). [Bh. I.2.7-9: तेऽसुराः। तेऽसुरा हेलयो हेलय इति कुर्वन्तः पराबभूवुः। (cf. ŚBr. 3.2.1.23-24) तस्माद् ब्राह्मणेन न म्लेच्छितवै नापभाषितवै। म्लेच्छो ह वा एष यदपशब्दः। म्लेच्छा मा भूमेत्यध्येयं व्याकरणम्।]

829 Commentators distinguish between two kinds of reasons for studying grammar. Thus, commenting on the opening to the

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Mahābhāṣya (see 827), Kaiyaṭa remarks that Patañjali here states the immediate reason (*sākṣātprayojanam*) for grammar: As a śabdānuśāsana, grammar serves to teach correct speech forms, so that it has to be studied in order to know such forms. In addition, notes Kaiyaṭa, there are reasons connected with this immediate one, namely the reasons given above under 1-5 of 828, which are given later on in the Bhāṣya: Knowing grammar and thereby recognizing correct usage allows a Brāhmaṇa to maintain the Vedas without fault, to use Vedic mantras properly in rituals, to conform to his sacred duty, to function properly as a teacher of traditional lore, and to avoid misinterpretations. [Pr. I.2: **भाष्यकारो ... व्याकरणस्य साक्षात्प्रयोजनमाह अथ शब्दानुशासनमिति। प्रयोजनप्रयोजनानि तु रक्षोहादीनि पश्चाद्वक्ष्यन्ते।**] Nāgeśa specifies that the immediate purpose of grammar is the precise understanding of correct speech forms through derivation. [Ud. I.2: **भगवांस्तु ... साक्षात्प्रयोजनं शब्दव्युत्पत्तिलक्षणं वदतीत्याह भाष्यकार इति।**, similarly, Udd. I.7: **अनुशासनं प्रकृतिप्रत्ययादिविभागेन व्युत्पादनम् तद् व्याकरणेन साक्षात्क्रियत इति साक्षात्प्रयोजनम्।**]

830 Beyond this, moreover, there is an ultimate motive. One should avoid using incorrect speech forms not only to avoid being like a barbarian but also in order to gain merit. From earliest times, Paṇinīyas stress this goal. Kātyāyana puts it as follows in his very first vārttika (**सिद्धे शब्दार्थसम्बन्धे लोकतोऽर्थप्रयुक्ते शब्दप्रयोगे शास्त्रेण धर्मनियमः यथा लौकिकवैदिकेषु।**): It is given from every day communication in the world that there is an established relation between words and meanings; it is also given that the use of a word is prompted by a meaning in that one uses words in order to convey meanings. This being so, a restriction intended for

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merit (*dharmaniyamaḥ*) is established by the grammar.

Kātyāyana says such a restriction has parallels in every day life and in practices based on Vedic lore. Two examples that Patañjali gives will suffice to illustrate. Smṛti texts provide that certain animals may be eaten and that others may not be eaten. It is forbidden, for example, to eat a domestic fowl or pig. Now, one consumes something in order to do away with hunger, and this can be done by eating anything, including dog meat. A restriction is set down, then: such and such may be eaten, such and such may not be eaten. In ritual practice, a sacrificial pole is used; an animal being offered is tied to this pole. The animal may be tied to any piece of wood, which one may set erect or not. A restriction is established, whereby the sacrificial pole is not only to be erected but is to be made of Bilva or Khadira wood. [Bh. I.8.10-12, 16-18: **लोके तावत् अभक्ष्यो ग्राम्यकुक्कुटोऽभक्ष्यो ग्राम्यशूकर इत्युच्यते। भक्ष्यञ्च नाम क्षुत्प्रतीघातार्थमुपादीयते। शक्यञ्चानेन स्वमांसादिभिरपि क्षुत्प्रतिहन्तुम्। तत्र नियमः क्रियते इदं भक्ष्यमिदमभक्ष्यमिति ... तथा बैल्वः खादिरो वा यूपः स्यादित्युच्यते। यूपश्च नाम पश्वनुबन्धार्थमुपादीयते। शक्यञ्चानेन किञ्चिदेव काष्ठमुच्छ्रित्यानुच्छ्रित्य वा पशुरनुबन्धुम्। तत्र नियमः क्रियते।**, cf. GDhS 17.8-38, Manu 5.16-21, YSm. 1.177, AiBr. 2.1]

Patañjali goes on to show how the same situation obtains with respect to language use. Both a correct speech form (*śabdena*) and an incorrect speech form (*apaśabdena*) serve to produce the same understanding of a meaning (*samānāyām arthagatau*). A restriction intended for merit is made in the grammar: The meaning in question should be conveyed only by a correct speech form, not by an incorrect one. And usage in conformity with this restriction produces felicity, prosperity. [Bh. I.8.20-22: **एवमिहापि समानायामर्थगतौ शब्देन चापशब्देन च धर्मनियमः क्रियते शब्देनैवार्थोऽभिधेयो नापशब्देनेति एवं**

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क्रियमाणमभ्युदयकारि भवतीति।] As typical examples of correct and incorrect usage, Patañjali elsewhere cites *go* (nom. sg. *gauḥ*) 'cow, ox' and several corrupt forms (*apabhraṁśāḥ*) that correspond to this: *gāvī, goṇī, gotā, gopotalikā* 'cow'. [Bh. I.2.24-25: **गौरित्यस्य शब्दस्य गावी गोणी गोता गोपोतलिकेत्येवमादयोऽपभ्रंशाः।**, similarly, Bh. I.5.21-22.]

831 In varttikā 9 of the Paspaśā (vārttika 11 in the Rohatak edition), Kātyāyana also remarks that the use of correct speech forms, preceded by a knowledge of (the) grammar (*śāstrapūrvake prayoge*) results in felicity (*abhyudayaḥ* [absence of sin, according to some interpreters]). [Paspaśā vt. 9: **शास्त्रपूर्वके प्रयोगेऽभ्युदयस्तत्तुल्यं वेदशब्देन।**] In addition, the Mahābhāṣya on A 6.1.84 cites a traditional passage giving a reason for the knowledge and use of correct speech forms :A single correct speech form (*ekaḥ śabdaḥ*) precisely known in accordance with what grammar teaches (*samyag jñātaḥ śāstrānvitaḥ*) is a wish-granting cow in heaven. [Bh. III.58.13-15: **तथा शब्दस्यापि ज्ञाने प्रयोगे प्रयोजनमुक्तम् ... एकः शब्दः सम्यग्ज्ञातः शास्त्रान्वितः सुप्रयुक्तः स्वर्गे लोके कामधुग्भवतीति।**] Moreover, among the additional reasons Patañjali gives for studying grammar (cf. 828) is the following: in order that we attain unity with the great deity that is speech. [Bh. I.3.22: **महता देवेन नः साम्यं यथा स्यादित्यध्येयं व्याकरणम्।**] This is said in the context of interpreting RV 4.58.3: **चत्वारि शृङ्गा त्रयो अस्य पादा द्वे शीर्षे सप्त हस्तासो अस्य। त्रिधा बद्धो वृषभो रोरवीति महो देवो मर्त्याँ आ विवेश॥** 'It has four horns, three feet, seven hands; bound in three ways, the bull roars; the great divine one entered mortals.' This verse has been interpreted in various

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ways in different traditions, for example in the Nirukta (13.7), and Patañjali gives it an interpretation that accords with tenets of grammarians. The four horns are the four types of words (*padajātāni*): nominals, verb forms, preverbs, and particles. The three feet are past, future, and present time. The two heads are the two aspects of speech, eternal or perennial (*nityaḥ*) and speech that is produced (*kāryaḥ*). The seven hands are the seven nominal vibhaktis (cf. A 1.4.104 [65, 67]). The bull is tied up at the three general areas where speech is produced: the chest, the throat, and the vault of the oral cavity. He is called *vṛṣabha* by virtue of his pouring out (urine and semen). He roars, that is, produces sounds. The great god is correct speech (*śabdaḥ*). [Bh. I.3.17-21: चत्वारि शृङ्गाणि चत्वारि पदजातानि नामाख्यातोपसर्गनिपाताश्च। त्रयो अस्य पादास्त्रयः कालाः भूतभविष्यद्वर्तमानाः। द्वे शीर्षे द्वौ शब्दात्मानौ नित्यः कार्यश्च। सप्त हस्तासो अस्य सप्त विभक्तयः। त्रिधा बद्धस्त्रिषु स्थानेषु बद्धः उरसि कण्ठे शिरसीति। वृषभो वर्षणात्। रोरवीति शब्दं करोति। कुत एतत्। रौतिः शब्दकर्मा। महो देवो मर्त्याँ आ विवेशेति। महान्देवः शब्दः।]

832 Early Pāṇinīyas such as Patañjali thus view grammar not merely as a means of knowing correct speech forms but, through this, also as a means of acquiring merit and ultimate felicity. This point of view continues to be maintained by later Pāṇinīyas, and it is set forth most completely by Bhartṛhari in the context of an elaborated philosophical view. There are, says Bhartṛhari, correct speech forms (*sādhavaḥ*), which are permanently established (*siddhāḥ*) and come down through an uninterrupted tradlition (*āgamāt*) from the śiṣṭas (*śiṣṭebhyaḥ*, see 834). Such usage is a means for acquiring merit (*dharma-sādhanam*). Incorrect (*asādhavaḥ*) speech forms are contrary (*viparītāḥ*) to correct ones in that they are not established in

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the tradition of śiṣṭas and are not means to merit, although there is no difference between the two with respect to conveying meanings (*arthapratyāyanābhede*). [VP 1.27: शिष्टेभ्य आगमात्सिद्धाः साधवो धर्मसाधनम्। अर्थप्रत्यायनाभेदे विपरीतास्त्वसाधवः॥] Grammar is, according to Bhartṛhari, the doorway to ultimate release (*dvāram apavargasya*), the curative for the stains which affect speech (*vāṅmalānāṁ cikitsitam*). [VP 1.14ab: तद् द्वारमपवर्गस्य वाङ्मलानां चिकित्सितम्।] As Āyurveda is the remedy for faults of the body, so is grammar the remedy for faults of speech, since one who knows grammar does not use corrupt speech form (*apabhraṁśān na prayuṅkte*), which are like causes of sin. [Vṛtti on VP 1.14 (48.3-4): वाङ्मलानां चिकित्सितम् आयुर्वेद इव शारीराणां दोषाणाम्। व्याकरणज्ञो हि प्रत्यवायहेतुभूतान-पभ्रंशान्न प्रयुङ्क्ते।, cf. Vṛtti on VP 1.174 (228.5-6)] The Vṛtti on VP 1.14 also speaks of one attaining union with the great being which is speech after having manifested in one a particular merit (*abhivyaktadharmaviśeṣaḥ*) which arises from the use of correct speech forms (*sādhuprayogāt*). [Vṛtti 47.6-7: साधुप्रयोगाच्चाभिव्यक्तधर्मविशेषो महान्तं शब्दा-त्मानमभिसम्भवन्वैकरण्यंप्राप्नोति।]

833 Bhartṛhari is by no means the first to consider that incorrect usages can be likened to causes of sin (Vṛtti 48.4: *pratyavāyahetubhūtān* [see 832]). Earlier Pāṇinīyas also considered that incorrect speech could produce demerit (*adharma*). Thus, for example, in the Paspaśā the argument is presented that, as there is merit in the knowledge of correct speech forms (*śabdajñāne dharmaḥ*), there is demerit in the knowledge of incorrect speech forms (*apaśabdajñāne'py adharmaḥ*). Indeed, the demerit in the latter is greater than the merit in the former, since there are more incorrect forms

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than correct ones; for each correct speech form there are many incorrect ones, as, for example, *gāvī, goṇī,* and so on correspond to *gauḥ* (see 830): [Paspaśā vt. 6: ज्ञाने धर्म इति चेत्तथाधर्मः। Bh. I.10.6-8: ज्ञाने धर्म इति चेत्तथाधर्मः प्राप्नोति। यो हि शब्दान्जानात्यपशब्दानप्यसौ जानाति। यथैव शब्दज्ञाने धर्म एवमपशब्दज्ञानेऽप्यधर्मः। अथवा भूयानधर्मः प्राप्नोति। भूयांसोऽपशब्दा अल्पीयांसः शब्दाः। एकैकस्य शब्दस्य बहवोऽपभ्रंशाः।, similarly, Bh. I.2.22-24] This presupposes that a person who knew correct usage as described in Pāṇini's grammar also knew "corruptions" of such usage, that is, vernacular Middle Indic forms like *gāvī,* and Patañjali explicitly says this: *yo hi śabdāñ jānāty apaśabdān apy asau jānāti* 'For, one who knows correct speech forms also knows incorrect ones.'

The argument concerning the knowledge of correct speech forms and incorrect ones is buttressed with an appeal to Vedic lore, which shows that there is a restriction (*niyamaḥ*) with respect to verbal behavior (*ācāre*), the use and not merely the knowledge of forms: The Veda relates how the Asuras were vanquished when they used incorrect speech (see 828), thereby showing that one must use only correct speech. [Paspaśā vt. 7: आचारे नियमः। Bh. I.10.11-12: आचारे पुनर्ऋषिर्नियमं वेदयते। तेऽसुरा हेलयो हेलय इति कुर्वन्तः पराबभूवुरिति।]

Later on in the same context, however, Patañjali makes an important point concerning the use of correct and incorrect speech forms: The restriction concerning this applies to ritual acts (*yājñe karmaṇi*), not to every day behavior, where the use of vernacular forms does not entail demerit. In support of this, Patañjali alludes to a traditional story concerning a group of sages (*ṛṣayaḥ*) referred to as *yarvāṇa* and *tarvāṇa* because they used such forms as *yarvāṇas* and *tarvāṇas* --- with *-r-* for *-d-* (cf. Skt. *dvādaśa,* Prakrit *bārasa, bāraha*

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'twelve') --- instead of *yad vā naḥ* 'what is ours' and *tad vā naḥ* 'that is ours'. These sages, says Patañjali, did not use such incorrect forms in rituals, so that they suffered no ill because of it, but the Asuras uttered incorrect speech in the course of a rite, so that they were vanquished. [Bh. I.11.10-14: यदप्युच्यत आचारे नियम इति याज्ञे कर्मणि स नियमः। एवं हि श्रूयते। यर्वाणस्तर्वाणो नामर्षयो बभूवुः ... ते तत्रभवन्तो यद्वानस्तद्वान इति प्रयोक्तव्ये यर्वाणस्तर्वाण इति प्रयुञ्जते याज्ञे पुनः कर्मणि नापभाषन्ते। तैः पुनरसुरैर्याज्ञे कर्मण्यपभाषितम् ततस्ते पराभूताः।]

It is thus clear that by the times of Kātyāyana and of Patañjali, who composed his Mahābhāṣya in the middle of the second century B.C., there was a general use of at least two sorts of Indo-Aryan: a more formal and "correct" speech used for purposes such as ritual performance and a more vernacular speech with Middle Indic characteristics.

834 Pāṇinīyas also recognized certain speakers as the models for correct usage as described in Pāṇini's grammar. These are the Śiṣṭas. In the Mahābhāṣya on A 6.3.109: पृषोदरादीनि यथोपदिष्टम्। (*pṛṣodarādīni yathopadiṣṭam*), Patañjali discusses how these model speakers are characterized and the relation between their speech and the Aṣṭādhyāyī.

a. A 6.3.109 provides that certain derivates, referred to by *pṛṣodarādīni* are accepted as taught (*yathopadiṣṭam*). In the traditional Pāṇinīya interpretation, *pṛṣodarādīni* contains *ādi* used in the sense 'kind' (*pṛṣodaraprakārāṇi* [see 204, 210]), so that this refers to items of the type *pṛṣodara* 'spotted-belly'. The items in question are all of the same kind in that they are treated as derived elements and their derivation involves deletion, augmenting, and sound replacement, but Pāṇini does not state these operations explicitly for them in the Aṣṭādhyāyī. [Bh. III.173.19-174.1:

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पृषोदरादीनीत्युच्यते कानि पृषोदरादीनि। पृषोदरप्रकाराणि। कानि पुनः पृषोदरप्रकाराणि। येषु लोपागमवर्णविकाराः श्रूयन्ते नचोच्यन्ते।] For example, *pṛṣodara* is treated as a compound equivalent to *pṛṣad udaram yasya* '(some one) whose belly is spotted'. This presupposes that the *-t* of *pṛṣat-* in *pṛṣat-udara* is dropped, so that *-a* and *u-* are continguous (*pṛṣa-udara*) and susceptible to replacement by *-o-* (A 6.1.87 [528]). But no sūtra of the Aṣṭādhyāyī explicitly provides for deleting *-t* here. Instead, Pāṇini gives *pṛṣodara* as a ready-made item in A 6.3.109.

b. This sūtra says *yathopadiṣṭam*, using *upadiṣṭam*. According to Pāṇinīyas, this means 'uttered' (*uccarita*): The verb *diś*, with the preverb *upa*, denotes the act of uttering, as when, after uttering sounds, one says 'These sounds have been uttered,' using *upadiṣṭāḥ*. [Bh. III.174.2-3: अथ किमिदमुपदिष्टानीति। उच्चरितानि। कुत एतत्। दिशिरुच्चाराणक्रियः। उच्चार्य हि वर्णानाहोपदिष्टा इमे वर्णा इति।] The question then arises, uttered by whom? --- to which the answer is: by the śiṣṭas. [Bh. III.174.4: कैः पुनरुपदिष्टाः। शिष्टैः।] A 6.3.109 is thus understood to provide that items of the type *pṛṣodara* are accepted as uttered, that is, as used, by the śiṣṭas. Another question immediately comes up: Who are the śiṣṭas? [Bh. III.174.4: के पुनः शिष्टाः।] Patañjali proceeds to identify these model speakers by different characteristics.

c. He first suggests that the śiṣṭas are grammarians (*vaiyākaraṇāḥ*), who have received instruction (*śiṣṭiḥ*) that is preceded by a work that imparts such instruction (*śāstra-pūrvikā*). It is grammarians who know such a work (*śāstrajñāḥ*). [Bh. III.174.4-5: वैयाकरणाः। कुत एतत्। शास्त्रपूर्विका हि शिष्टिर्वैयाकरणाश्च शास्त्रज्ञाः।] This suggestion obviously relies on the connection between *śiṣṭa* 'instructed',

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derived from *śās* 'instruct' (*śiṣṭa* < *śās-ta*: A 6.4.34, 8.3.60, 8.4.41 [447, 563, 574]), and *śāstra*, derived from the same verb (see 827). It also involves circularity: The Śiṣṭas are grammarians, whose instruction presupposes a śāstra; and this śāstra presupposes the very instruction which allows for the śiṣṭas to be instructed ones, grammarians. Such mutually dependent reasonings are not in order. [Bh. III.174.5-6: **यदि तर्हि शास्त्रपूर्विका शिष्टिः शिष्टिपूर्वकञ्च शास्त्रम् तदितरेतराश्रयं भवति। इतरेतराश्रयाणि च न प्रकल्पन्ते।**]

d. Patañjali therefore goes on to characterize the śiṣṭas not by their instruction in grammar but by their dwelling place (*nivāsataḥ*) and their behavior (*ācārataḥ*). These model speakers are Brāhmaṇas who dwell in Āryāvartta, the country of the Āryas in the north-center of the subcontinent, where alone their exemplary behavior is found. Brāhmaṇas who dwell in this abode of the Āryas and have only as much grain as they can carry in a small pot, are not greedy for honor, following established rules of correct behavior without having to be given any immediate cause for this, and who have attained total expertise in some traditional area of learning without explicit instruction, these honorable ones are the śiṣṭas. [Bh. III.174.6-10: **एवं तर्हि निवासत आचारतश्च। स चाचार आर्यावर्त्त एव ... एतस्मिन्नार्यनिवासे ये ब्राह्मणाः कुम्भीधान्या अलोलुपा अगृह्यमाणकारणाः किञ्चिदन्तरेण कस्याश्चिद् विद्यायाः पारगास्तत्रभवन्तः शिष्टाः।**]

e. The śiṣṭas' being models is thus not made dependent on their having received instruction in grammar, but another question arises: If the śiṣṭas characterized as shown are the authority with respect to correct usage, what purpose does the Aṣṭādhyāyī serve? The Aṣṭādhyāyī is then said to have for its purpose to make known the śiṣṭas, as follows. Some one who is studying the Aṣṭādhyāyī sees that another person,

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although he is not studying this grammar, nevertheless uses the correct speech forms that are provided for therein. He then reasons: It is either this man's favor of fate or his nature that, although he does not study the Aṣṭādhyāyī, he still uses the correct speech forms that are provided for in this grammar; certainly he knows other such correct speech forms also. [Bh. III.174.10-15: यदि तर्हि शिष्टाः शब्देषु प्रमाणं किमष्टाध्याय्या क्रियते। शिष्टज्ञानार्थाष्टाध्यायी। कथं पुनरष्टाध्याय्या शिष्टाः शक्या विज्ञातुम्। अष्टाध्यायीमधीयानोऽन्यं पश्यत्यनधीयानं येऽत्र विहिताः शब्दास्तान् प्रयुञ्जानम्। स पश्यति नूनमस्य दैवानुग्रहः स्वभावो वा योऽयं न चाष्टाध्यायीमधीते ये चात्र विहिताः शब्दास्तांश्च प्रयुङ्क्ते। अयं नूनमन्यानपि जानाति। एवमेषा शिष्टज्ञानार्थाष्टाध्यायी।]

f. In sum, according to Patañjali, the Aṣṭādhyāyī describes the usage of model speakers, the śiṣṭas, and items like *pṛṣodara* are given in A 6.3.109 as correct derivates because these model speakers use terms of this sort. The precise boundaries of Āryāvartta,which Patañjali gives (Bh. III.174.7-8, I.475.3), do not remain the same at all times (cf., for example, Manu 2.22 and see the Rohata edition of the Mahābhāṣya II.849 note 1, IV.652 note 2), but later Pāṇinīyas continue to stress the importance of the śiṣṭas and also say that Pāṇini's grammar serves to make something known about them. Thus, Bhartṛhari speaks of the grammar as allowing one to infer that certain speakers are śiṣṭas, those who, without instruction, are established in the śabdabrahman pure and devoid of corrupt elements. Because the grammar thus provides a knowledge of the śiṣṭas, it serves to convey that items of the type *pṛṣodara* are correct since they are part of śiṣṭa usage. [Vṛtti on VP 1.12 [43.7-9]: उपदेशव्यान्तरेण

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संस्कारवति निरपभ्रंशे शब्दब्रह्मणि लब्धप्रतिष्ठानां शिष्टानामनुमानम् शिष्टज्ञानाच्च पृषोदरप्रकाराणां शिष्ट-प्रयोगत्वात् साधुत्वप्रतिपादने निमित्तं व्याकरणम्।]

g. Of course, Pāṇini was from the northwest of the subcontinent, not from the north-central area (see 5). Nevertheless, it is reasonable to consider that he too described a language current within a certain social stratum, the language of an élite. In this context, it is worth reiterating the famous passage from the Kauṣītakibrāhmaṇa in which the speech of the north is said to be held in particular esteem: In the north, speech is uttered particularly clearly, so that people go north to learn this speech, and any one who hails from this area is attended to respectfully. [KBr. 7.7.36-39: तस्मादुदीच्यां दिशि प्रज्ञाततरा वागुद्यते। उदञ्च उ एव यन्ति वाचं शिक्षितुम्। यो वा तत आगच्छति तस्य वा शुश्रूषन्त इति ह स्माह।]

835 It is clear from what I have pointed out that to Pāṇinīyas grammar served more than a purely descriptive purpose. A grammar like Pāṇini's teaches the formation of correct speech forms, and the use of such correct speech together with a knowledge of how the grammar accounts for it leads to merit; indeed, the grammar is considered to establish a restriction such that one should use only correct speech forms in order to gain merit (see 830-831). Still, Pāṇinīyas accept that the immediate purpose of a treatise like Pāṇini's is to account for correct speech forms (see 829).

It is reasonable to consider that Pāṇini himself also considered his work to serve not only an immediate but also an ultimate purpose. He was, of course, a product of his society, and as such he would be expected to observe certain religiously significant acts, as would any authoritative teacher. Thus, Patañjali speaks of the teacher (*ācāryaḥ*) Pāṇini as one who has achieved authority (*pramāṇabhūtaḥ*) and says that he sat

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facing east in a pure place, with a ring of darbha grass around his right ring finger, and composed his set of sūtras with great effort [Bh. 1.39.10-11: **प्रमाणभूत आचार्यो दर्भपवित्र-पाणिः शुचाववकाशे प्राङ्मुख उपविश्य महता यत्नेन सूत्रं प्रणयति स्म।**] It is not possible to prove the point beyond any doubt whatever, but such an authoritative teacher in the social environment of late Vedic India could be expected to view language usage in very much the same way as Kātyāyana, Patañjali, and other Pāṇinīyas. Although the immediate purpose of the Aṣṭādhyāyī is to account for a language, then, Pāṇini may well have viewed his treatise as describing an élite speech segregated from less correct vernacular speech.

This does not necessarily imply, however, that within the domain it treats, the Aṣṭādhyāyī is fully prescriptive. In fact, with respect to this domain there is nothing at all particular prescriptive about the Aṣṭādhyāyī. By granting status to various dialectal features (see 2), Pāṇini recognizes that the language he describes is not fixed. He does not legislate that the usage of one dialect area alone, even the much praised northern speech (see 834g), shall alone be deemed acceptable. On the contrary, he simply accounts for such speech by means of his derivational system.

836 Pāṇinīyas too recognize that the grammar is a means of explaining (*anvyākhyānam*) usage. Indeed, they go farther than this and maintain that grammar merely explains data of perennial usage. Consider, for example, a discussion that concerns derivates formed by A 3.2.1 (295). The sūtra as formulated allows not only for items like *kumbhakāra* but also for derivates such as *ādityadarśa* 'one who looks at, sees the sun'. Even if such a derivate is not actually used in the speech of a particular time, it is grammatically well formed: *ādityadarśaḥ* corresponds to *ādityaṁ paśyati* as *kumbha-kāraḥ* corresponds to *kumbhān karoti*. From what Kātyāyana says, we know that *ādityadarśa* was indeed not used in his

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speech. For, in his fifth vārttika on A 3.2.1 (अनभिधानात्।) Kātyāyana says derivates like this are not allowed because they are not used to convey the meanings (*anabhidhānāt*) of corresponding phrases such as *ādityaṁ paśyati*. Kaiyaṭa explains what is meant as follows: A 3.2.1 is nothing more than an explanation of perennially used words, and in the world of every day communication items such as *ādityadarśa* are not used to convey the meanings of phrases like *ādityaṁ paśyati*, so that the sūtra does not serve to allow inferring that *ādityadarśa* and comparable derivates are correct. [Pr. III.221: अनभिधानादिति। नित्यानां शब्दानामिदमन्वाख्यानमात्रम् न चादित्यं पश्यतीत्याद्यर्थप्रतिपादनायादित्यदर्शादयः शब्दा लोके प्रयुज्यन्त इति शास्त्रेणापि साधुत्वेन नानुमास्यन्त इत्यर्थः।] Much earlier, Patañjali says, in the Bhāṣya on vārttika 16 to A 1.1.44, that one who holds that words are perennial merely explains the correctness of speech forms by means of grammatical rules. [Bh. I.104.22-23: यस्य पुनर्नित्याः शब्दाः प्रयुक्तानामसौ साधुत्वमन्वाचष्टे।]

Under an extreme version of this viewpoint, one can maintain that all forms of this perennial speech must be valid for all speakers, so that sūtras which specify particular places and persons cannot provide for usage exclusive to the dialects of these areas and people. Details concerning this are considered in part III.1 of my work, under A 1.1.44. For the present it is sufficient to say that, even if one took the position that rules of a grammar like the Aṣṭādhyāyī indeed are meant to account for speech forms that are perennial, one would not have also to adopt this extreme position. The speech in question could indeed have dialectal variation.

837 In brief, so far as the immediate purpose of the Aṣṭādhyāyī is concerned, it cannot be deemed strictly prescriptive. This grammar accounts for usage which is

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accepted as the speech of model speakers. There can be no doubt whatever that Pāṇini had native control of this language. Nor can one reasonably doubt that Kātyāyana and Patañjali also had a native command of the language described. Kātyāyana and Patañjali could say without hesitation that a derivate such as *ādityadarśa* was not used in their speech (see 836), and Patañjali could distinguish between what should obtain (*prāpnoti, prāpti*) by rule and what is desired (*iṣyate, iṣṭi*) in the speech of his time and place (e.g., Bh. I.488.18-20).

Later on, when Sanskrit had ceased to be truly a current language, the Aṣṭādhyāyī could indeed serve as a restrictive and prescriptive guide, but even then great writers such as Kālidāsa were not afraid to use forms that are strictly speaking un-Pāṇinian.

II. Terms for the language described and for the grammar and its components.

A. *saṁskṛ, saṁskṛta, saṁskāra.*

838 I have used 'Sanskrit' with reference to the Indo-Aryan language Pāṇini describes, although he himself does not use *saṁskṛtam* with reference to this language (see 7). In the Sundarakāṇḍa of the Rāmāyaṇa, *saṁskṛtā vāk* (acc. sg. *saṁskṛtāṁ vācam*) is used, probably for the first time in Sanskrit literature, with reference specifically to a language. Hanumān here considers in what language he should address Sītā: If I speak saṁskṛtā vāk, as though I were a twice-born, he says, Sītā will be frightened, thinking I am Rāvaṇa. This blameless Sītā cannot be consoled by me otherwise, so that I must speak in the language of men (*mānuṣaṁ vākyam* 'human utterance'), with meaning (and nothing else). [Rāmāyaṇa 5.28.18-19: **यदि वाचं प्रदास्यामि द्विजातिरिव संस्कृताम्। रावणं मन्यमाना मां सीता भीता भविष्यति॥ अवश्यमेव वक्तव्यं मानुषं वाक्यमर्थवत्। मया सान्त्वयितुं शक्या नान्यथेयमनिन्दिता॥**] A

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contrast is made here between saṁskṛtā vāk and mānuṣyaṁ vākyam 'utterance of ordinary men'. The latter, characterized by having meaning (*arthavat*), is the vernacular. Of course, saṁskṛtā vāk too must have meaning, but it also has something else. The term *saṁskṛta* used in this context has connotation which merit some brief comments.

839 *saṁskṛta* is the past participle of *kṛ* with the preverb *sam*. Pāṇini explicitly provides for the augment *suṭ* before the *k* of *kṛ* used with the preverbs *sam, pari* in the meanings 'adorn', 'form a group' (A 6.1.137-138 [527]). He also recognizes the use of *saṁskṛta* in the sense 'prepared'. Thus, A 4.4.3 (339) allows for derivates such as *dādhika*, used of food that has been prepared with curds. Similarly, A 4.2.16: **संस्कृतं भक्षाः (तत्र)** (*saṁskṛtaṁ bhakṣāḥ* [*tatra* 14]) provides for introducing taddhita affixes after a P_1 which has a seventh-triplet ending and refers to something in which edibles (*bhakṣāḥ*) are prepared; e.g., *bhrāṣṭra* refers to foods prepared in a frying pan (*bhrāṣṭre saṁskṛtā bhakṣāḥ*). In its comments on these sūtras, the Kāśikāvṛtti notes that the act denoted by *saṁskṛ* (*saṁskāraḥ*) here consists in heightening the quality of something, and the Bālamanoramā on SK 1217 (= A 4.2.16) remarks that this consists in imparting a particular quality (*guṇaviśeṣādhānam*) to something by means of cooking and such. [Kāś. I.367, 438: **सत उत्कर्षाधानं संस्कारः।** Bāl. II.349: **संस्कारो नाम पाकादिना गुणविशेषाधानम्।**] Similarly, in the course of pointing out that *guṇa* has various meanings, Patañjali remarks that this word is used in the sense of saṁskāra, as when food which is prepared (*saṁskṛtam annam*) is referred to as *guṇavat* 'possessing a quality'. [Bh. II.367.6-7: **अस्ति संस्कारे वर्तते। तद्यथा संस्कृतमन्नं गुणवदित्युच्यते।**]

saṁskāra also is used of acts connected with the body (*śarīrasaṁskāra*), that is, enhancing ones body through bathing, anointing, and such. For example, the

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Yājñavalkyasmṛti (1.84: क्रीडां शरीरसंस्कारं समाजोत्सव-दर्शनम्। हास्यं परगृहे यानं त्यजेत्प्रोषितभर्तृका॥) says a women whose husband is away should avoid games, enhancing her body (*śarīrasaṁskāram*), seeing large groups of people and festivals, laughing, and going to some one else's home.

The saṁskāra of the body may also be for ritual purposes. For example, in the course of the Jyotiṣṭoma rite, the Yajamāna has his hair and beard cut (*keśaśmaśrú vapate*) and his nails clipped (*nakhāni ní kṛntate*). In a brāhmaṇa passage from the Taittirīyasaṁhitā, it is explained that the Yajamāna does this in order to become ritually pure. The hair and beard are dead matter, hence improper for a ritual; by ridding himself of the dead skin that is improper for a ritual, the Yajamāna becomes appropriately eligible to participate in the rite before he enters into this ritual. [TS 6.1.1.2: केशश्मश्रु वपते नखानि नि कृन्तते मृता वा एषा त्वगमेध्या यत्केशश्मश्रु मृतामेव त्वचममेध्यामपहत्य यज्ञियो भूत्वा मेधमुपैति ...] The acts in question are referred to in ritual literature as *saṁskāras*; see, for example, JS 3.8.2.3-4 (संस्कारास्तुपुरुष-सामर्थ्ये यथावेदं कर्मवद्व्यवतिष्ठेरन्। याजामानास्तु तत्प्रधान-त्वात् कर्मवत्), JNMV 3.8.3.4-5 (संस्कारावपनाद्याः किमध्वर्योः स्वामिनोऽथवा। अध्वर्योस्तत्र शक्तत्वात्तद्वेदोक्तेश्च तस्य ते॥ संस्कारैर्योग्यतां प्राप्य स्वकार्यं कर्तुमृत्विजः। क्रीणात्यतः क्रिया तेषां संस्क्रिया यजमानगा॥), which take up the question whether the saṁskāras in question pertain to the officiating priest (the Adhvayu) or to the Yajamāna.

Another example from a brāhmaṇa passage of the Taittirīyasaṁhitā, where this text itself uses *saṁskṛ*, is 5.6.6.3-4: शरीरं वा एतदग्नेर्यच्चित्यं आत्मा वैश्वानरो यच्चित्ते वैश्वानरं जुहोति शरीरमेव सꣳस्कृत्याभ्यारोहति शरीरं वा

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एतद्यजमानः सँस्कुरुते यदग्निं चिनुते यच्चिते वैश्वानरं जुहोति शरीरमेव सँस्कृत्यात्मनाभ्यारोहति तस्मात्तस्य नावद्यन्ति। 'The altar that is to be formed by heaped bricks is the body of Agni, Vaiśvānara is (Agni's) self. By offering the Vaiśvānara cake on the heaped altar (the Yajamāna) mounts (Agni's) body after ritually preparing it. The Yajamāna ritually prepares his own body by heaping up the fire altar; by offering the Vaiśvānara cake on the heaped altar, he mounts it with himself after ritually preparing it. Therefore, one does not cut (the Vaiśvānara cake).' Since the fire altar is formed by heaping up bricks, *saṁskṛtya* in *śárīram evá saṁskṛ́tya* 'after ... the very body' can indeed mean 'after putting together'. On the other hand, when the text subsequently speaks of the Yajamāna mounting (*abhyárohati*) his own body with the self (*ātmánā*) --- that is, entering the physical body --- after preparing this body (*śárīram evá saṁskṛ́tya*), it is best to consider that this concerns ritual preparation.

840 Such ritual preparation is, of course, well known, and there is a series of other acts called *saṁskāra,* one of which is the initiation ceremony --- the upanayana --- whereby a young man is made fit for sacred study. In the Paspaśā, Patañjali talks about what used to be normal in an earlier age: At that time, Brāhmaṇas would study grammar (*vyākaraṇaṁ smādhīyate*) immediately after their saṁskāra (*saṁskārottarakālam*). [Bh. I.5.6-76: पुराकल्प एतदासीत्। संस्कारोत्तरकालं ब्राह्मणा व्याकरणं स्माधीयते।] As Nāgeśa notes (Ud. I.23: संस्कारः उपनयनम्), by *saṁskāra* Patañjali here means the upanayana ceremony. In the Mahābhāṣya on A 6.1.84, on the other hand, Patañjali remarks that the upanayana cermenony, performed in accordance with the teaching that a Brāhmaṇa is to undergo this rite in his eighth year after conception, has saṁskāra as its purpose (*upanayanaṁ saṁskārārtham*). And having undergone this ceremony once (*sakṛc cāsāv upanītaḥ*),

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says Patañjali, he becomes saṁskṛta (*saṁskṛto bhavati*), that is, he is ritually prepared for sacred study [Bh. III.57.27-58.1: **तथा गर्भाष्टमे ब्राह्मण उपनेय इत्युपनयनं संस्कारार्थम्। सकृच्चासावुपनीतः संस्कृतो भवति।**] Here *saṁskāra* clearly refers to the ritual preparation which results from the upanayana ceremony and which makes a Brāhmaṇa eligible for sacred study.

In still another passage, Patañjali speaks of a saṁskāra as a procedure whereby a vessel becomes pure. The discussion concerns the term *aniravasitānām* of A 2.4.10 (325). In the opinion of Patañjali, and also later Paṇinīyas, *śūdrāṇām aniravasitānām* refers to Śūdras who are not excluded from using a twice-born's vessel to eat in: Śūdras are not thus excluded (*te'niravasitāḥ*) if a vessel from which they have eaten (*yair bhukte pātram*) becomes pure through a saṁskāra (*saṁskāreṇa śudhyati*); Śūdras are excluded if a vessel from which they have eaten is not rendered pure even by a saṁskāra. [Bh. I.475.8-10: **एवं तर्हि पात्रादनिरवसितानाम्। यैर्भुक्ते पात्रं संस्कारेण शुध्यति तेऽनिरवसिताः। यैर्भुक्ते पात्रं संस्कारेणापि न शुध्यति ते निरवसिताः।**]

841 *Saṁskṛta* is used with reference not only to some person or utensil which has been prepared, made ritually pure, but also to a language (see 838). Speech which is saṁskṛta (*saṁskṛtā vāk, saṁskṛtā giḥ*) is characterized by its saṁskāra, and the epithet *saṁskāravatī* 'which has saṁskāra' is used of such speech. For example, in Kumārasambhava 1.28cd **(संस्कारवत्येव गिरा मनीषी तया स पूतश्च विभूषितश्च॥)**, Kālidāsa describes Himavat as purified and adorned (*pūtaś ca vibhūṣitaś ca*) by Pārvatī as a learned man is by speech that possesses saṁskāra (*saṁskāravatyeva girā manīṣī*), that is, by speech which possesses purity and thereby constitutes an adornment for the speaker. In Kumārasambhava 7.90 **(द्विधा**

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प्रयुक्तेन वाङ्मयेन सरस्वती तन्मिथुनं नुनावा संस्कारपूतेन वरं वरेण्यं वधूं सुखग्राह्यनिबन्धनेना), Kālidāsa speaks of Sarasvatī as blessing the couple Śiva and Pārvatī in speech of two kinds: the groom in speech purified by saṁskāra (*saṁskārapūtena varaṁ*), the bride in speech whose structure is easily grasped (*vadhūṁ sukhagrāhyanibandhanena*). As Mallinātha notes in his comments on the verse, Sarasvatī used Sanskrit to Śiva and Prakrit to Pārvatī. [संस्कारेण शास्त्रन्युत्पत्त्या पूतेन प्रकृतिप्रत्ययविभागशुद्धेन संस्कृतेनेत्यर्थः ... सुखेन ग्राह्यं सुबोधं निबन्धनं रचना यस्य तेन वाङ्मयेन प्राकृतभाषयेत्यर्थः।]

In the two passages cited, Kālidāsa uses *saṁskāra* with reference to purity and the means of achieving this purity, just as Patañjali used the term with these two values much earlier (see 840). As shown, in his commentary on Kumārasambhava 7.90, Mallinātha explains that Sanskrit is speech which has been purified (*pūtena*[*vāṅmayena*]) by a particular saṁskāra, namely the grammatical explanation whereby speech is purified (*śāstravyutpattyā pūtena*), the division into bases and affixes, whereby speech is rendered pure (*prakṛti-pratyayavibhāgaśuddhena*). In his commentary on Kumārasambhava 1.28, Mallinātha explains that the saṁskāra found in the speech referred to is the purity (*śuddhiḥ*) which is produced by grammar (*vyākaraṇajanyā*). [संस्कारो व्याकरण-जन्या शुद्धिस्तद्वत्या गिरा वाचा।] The view that grammar serves to purify speech goes back to a considerably earlier time.

842 In consonance with what Patañjali said earlier, the Vṛtti on VP 1.12 says that the grammar, as a set of rules concerning what is general and what is particular, serves as the cause of attaining, through a brief means, unity with the ultimate being, whose essence is speech, the śabdabrahman. [Vṛtti 43.6-7:

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सामान्यविशेषवद्धि लक्षणं ... शब्दब्रह्मणः कृत्स्नस्य लघुनोपायेन समधिगमनिमित्तम्। (see also 831-832)] The Vṛtti on VP 1.12 goes on to speak of the Śabdabrahman as devoid of corruptions (*nirapabhraṁśe*) and possessed of saṁskāra (*saṁskāravati,* see 834f). That is, the Śabdabrahman is kept pure. This purity consists in its being established in its quality of correct speech. Elsewhere, Bhartṛhari speaks of a speech purification (*śabdasaṁskāraḥ*) as a means of attaining the ultimate being (*siddhiḥ paramātmanaḥ*). [VP 1.144ab: तस्माद्यः शब्दसंस्कारः सा सिद्धिः परमात्मनः।] That is, as the Vṛtti explains, when the speech-essence is purified (*saṁskriyamāṇe śabdatattve*) so as to be established in its quality of correct speech, the harmful impediments of incorrect speech are done away with, so that a particular merit is manifested as one uses correct speech, and felicity is thereby assured. [Vṛtti 201.8-202.1: व्यवस्थितसाधुभावेन हि रूपेण संस्क्रियमाणे शब्दतत्त्वेऽपभ्रंशोपघातापगमादाविर्भूते धर्मविशेषे नियतोऽभ्युदयः।] The Paddhati on the passage just cited explicitly says that grammar (*vyākaraṇam*) purifies the speech-essence (*śabdatattvaṁ saṁskaroti*). When grammar carries out this purification, remarks Vṛṣabhadeva, one who has studied grammar avoids incorrect speech forms (*apabhraṁśān pariharati*) and uses correct ones (*sādhūṁś ca prayuṅkte*). A particular merit is manifested in the user as a result of this correct usage, whence arises felicity. [Paddhati 202.6-8: यदा हि व्याकरणं शब्दतत्त्वं संस्करोति ततोऽयमधीतव्याकरणोऽपभ्रंशान्परिहरति साधूंश्च प्रयुङ्क्ते। ततः ... साधुप्रयोगाद्धर्मविशेष आविर्भवति ततोऽभ्युदय इति।]

Clearly, this harks back to what Kātyāyana said about grammar establishing a restriction concerning usage, intended for merit (see 830). And the purification (*saṁskāra*) of speech

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is none other than the grammatical explanation of correct speech forms segregated from incorrect ones. Thus, Bhartṛhari says that the wise declare grammar to be the primary anicllary to the Veda (*prathamaṁ chandasām aṅgam āhur vyākaraṇaṁ budhāḥ*, cf. 826), the highest form of austerity (*tapasām uttamaṁ tapaḥ*), closest to Brahman, the ultimate being in the form of speech. [VP 1.11: **आसन्नं ब्रह्मणस्तस्य तपसामुत्तमं तपः। प्रथमं छन्दसामङ्गमाहुर्व्याकरणं बुधाः॥**] He goes on to explain that grammar is thus qualified as the ancillary which directly contributes to the Veda, the one whereby Brahman in the form of speech receives a purification of its form, its essence (*svarūpasaṁskāraḥ*). The purpose of this saṁskāra is to convey the correctness of this Brahman in speech form. [Vṛtti 40.1-2: **तस्य शब्दब्रह्मणो हि यतः स्वरूपसंस्कारः साधुत्वप्रतिपत्त्यर्थः तदासन्नं साक्षादुपकारि।**]

The context here is the Veda, which is considered an evolute of śabdabrahman and is accepted as being eternal and immutable. Hence, the saṁskāra in question cannot be the purification of anything possibly impure. It is, instead, as Vṛṣabhadeva notes, the explanation (*anvākhyāna*) of divided elements of correct speech, carried out in grammar by positing bases, affixes, and so on. [Paddhati 40.7: **न विशिष्टोत्पत्तिरत्र संस्कारः अपि तु प्रकृतप्रित्ययादिभिर्विभागान्वाख्यानम्।**] Again, in the verse where Bhartṛhari says grammar is the remedy for stains which affect speech (VP 1.14, see 832), he calls grammar the purifying means of all sciences (*pavitraṁ sarvavidyānām*), and the Vṛtti comments that this is so because grammar is the necessary condition for the saṁskāra of speech. [Vṛtti 48.6: **पवित्रं सर्वविद्यानाम्। तन्निमित्तत्वात्संस्कारस्य।**] As Vṛṣabhadeva remarks, this is so because it is in grammar that all correct speech forms are explained in terms of divisions into bases and so on. [Paddhati

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48.26-27: तन्निमित्तत्वादिति। यतो व्याकरणे सर्वे शब्दाः प्रकृत्यादिविभागेनान्वाख्यायन्ते।]

843 A grammar such as Pāṇini's is, as I pointed out in 827, a means whereby correct speech forms are taught (*anuśiṣyante*), that is, explained through derivation (*vyutpādyante*). In the course of explaining why the grammar is called a *śabdānuśasana*, Jinendrabuddhi not only uses *anuśiṣyante* and *vyutpādyante* but explicitly shows that *saṁskriyante* is used synonymously with these, using *saṁskriyante* to explain *anuśiṣyante*, which in turn is paraphrased with *vyutpādyante*. [Nyāsa I.7: अनुशिष्यन्ते संस्क्रियन्ते व्युत्पाद्यन्तेऽनेन शब्दा इत्यनुशासनम्। शब्दानामनुशासनं शब्दानुशासनम्।] This use of *saṁskṛ* is not only reflected also in Mallinātha's commentary on Kumārasambhava 7.90 (see 841), it goes back to a much earlier time.

In the Mahābhāṣya passage cited in 225, Patañjali says *saṁskṛtya saṁskṛtya padāny utsṛjyante* 'padas are let go once they have been ...' and uses the absolutive *saṁskṛtya*. Nāgeśa remarks that by *saṁskṛtya* Patañjali means 'after explaining as correct' (*sādhutvenānvākhyāya*). [Ud. I.129: संस्कृत्येति। साधुत्वेनान्वाख्यायेत्यर्थः।] That is, Patañjali has used *saṁskṛtya* with reference to the grammatical explanation of correct words as derived by Pāṇinian rules. Yāska (Nir. 1.12, 1.14, 2.1) also uses *saṁskṛ* and *saṁskāra* in a comparable manner, although the passages in question involve exegetical details whose proper discussion require so much space that I omit dealing with them here. Suffice it to note that Yāska uses *svarasaṁskārau* with reference to accents (*svara*) and the derivational formation of words from bases and so on and that in Nirukta 2.1 he says one should emphatically not refrain from giving etymological explanations (*na tveva na nirbrūyāt*) in cases where the structures are not transparent: One should not

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necessarily respect the grammatical explanation of words (*na saṁskāram ādriyeta*). In addition, the Vājasaneyiprātiśākhya begins (1.1: **स्वरसंस्कारयोः छन्दसि नियमः।**) by saying that in the language of sacred Vedic literature (*chandasi*) there is a restriction with respect to accents and saṁskāra; the text uses *svarasaṁskārayoḥ*, just as Yāska uses *svarasaṁskārau*.

844 In sum, according to Pāṇinīyas, speech called *saṁskṛta* (*saṁskṛtam, saṁskṛtā vāk, saṁskṛtā giḥ*) is the pure, correct speech of model speakers, described in a grammar like Pāṇini's Aṣṭādhyāyī. The very description provided in such a work is viewed as a saṁskāra in two ways: as a derivational explanation of correct speech forms (*śabda, sādhuśabda*) and as a purification of speech, since correct speech forms are thereby segregated from corrupt ones (*apaśabda, apabhraṁśa, asādhuśabda*).

B. *śabdānuśāsana, vyākaraṇa, śāstra, sūtra, yoga, lakṣaṇa*

845 *śabdānuśāsanam*, equivalent to *śabdānām anuśāsanam* (see, e.g., Nyāsa 1.7 [843]), contains the noun *anuśāsana*, a derivate, formed with the suffix *lyuṭ* following *śās* 'instruct', with the preververb *anu*. This derivate can signify the act of instructing or a means whereby instruction is imparted (see A 3.3.115, 117 [291, 293]), and the object of this instruction is correct speech forms (*śabda*). In accordance with the generally held view that a grammar such as Pāṇini's serves to teach correct usage as opposed to incorrect speech, Pāṇinīyas also stress that *śabdānuśāsana* refers to a *śāstra* by means of which correct speech forms (*sādhavaḥ śabdāḥ*), divided into bases and so on, are made known (*jñāpyante, bodhyante*) as discriminated from incorrect speech forms (*viviktāḥ, vivicya = asādhubhyo vibhajya* 'after discriminating, [that is,] after separating [them] from incorrect ones'). [PM 1.7: **विविक्ताः साधवः शब्दाः प्रकृत्यादिविभागतो ज्ञाप्यन्ते येन तच्छास्त्रमत्र**

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शब्दानुशासनम्।, ŚK 1.3: ... अनुशिष्यन्ते विविच्य असाधुभ्यो विभज्य बोध्यन्ते येनेति करणे ल्युट्।, Ud. 1.3: अनुशिष्यन्तेऽसाधुशब्देभ्यो विविच्य ज्ञाप्यन्तेऽनेनेति ...]

Most commentators interpret *anuśāsana* as an instrument noun, but Annambhaṭṭa interprets it as an action noun equivalent to *vyutpādana* 'explanation': A śabdānuśāsana is an explanation of correct speech forms divided into bases, affixes, and so on. [Udd. 1.7: अनुशासनं प्रकृतिप्रत्ययादिविभागेन व्युत्पादनम् तद्व्याकरणेन साक्षात्क्रियत इति साक्षात्प्रयोजनम्।; see 829] Pāṇinīyas generally agree, however, in considering that *śabdānuśāsana* is an etymologically descriptive term that refers to grammar and as such is synonymous with *vyākaraṇa* (see 827).

846 *vyākaraṇa* itself is derived, with the suffix *lyuṭ*, from the verb *kṛ* with the preverbs *vi* and *ā*. *Vyākaraṇa* is used with reference both to a grammar like Pāṇini's and to the science of grammar. Thus, for example, in the Mahābhāṣya passage cited in 224, Patañjali speaks of vyākaraṇa as a later science (*uttarā vidyā*), one which follows upon the study of works such as prātiśākhya and śikṣā treatises. In the Muṇḍakopaniṣad, grammar, along with the other five vedāṅgas (see 826), and the four Vedas are grouped together as making up knowledge (*vidyā*) which is not supreme (*aparā*), as opposed to the ultimate knowledge (*parā vidyā*), whereby the imperishable ultimate being is attained. [MU 1.1.4-5: ... द्वे विद्ये वेदितव्ये इति ह स्म यद् ब्रह्मविदो वदन्ति परा चैवापरा च। तत्रापरा ऋग्वेदो यजुर्वेदः सामवेदोऽथर्ववेदः शिक्षा कल्पो व्याकरणं निरुक्तं छन्दो ज्योतिषमिति। अथ परा यया तदक्षरमधिगम्यते।]

847 Given what Pāṇinīyas say about *śabdānuśāsana*, it will be useful briefly to consider how *vy-ā-kṛ* 'separate, discrimi-

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nate, explain' is used in early texts and how this relates to the Pāṇinīya conception of grammar.

a. A variety of the new moon ceremony involves milking six cows. To do this, the Adhvaryu priest brings together the calves with their mothers, then touches one cow at a time with a branch, separating each from its mother, and this is accompanied by the mantra **वायव॑स्थ** (e.g., VS 1.1) 'You are the winds'. After separating them (*vyākṛtya*), the Adhvaryu touches one of the mothers, again with the branch, and this is accompanied by the mantra **देवो वः सवि॒ता प्रार्प॑यतु ...** (e.g., VS 1.1) 'May god Savitṛ make you reach (good pastures ...)'. In the Śatapathabrāhmaṇa and Kātyāyana's śrautasūtra, *vy-ā-kṛ* is used with reference to the separating. [ŚBr. 1.7.1.4: **अ॒थ मातृणाम्ए॒कां शा॒खयो॒पस्पृशति वत्से॒न व्याकृ॒त्य।**, KŚS 4.2.7-9: **मातृभिर्वत्सान् संसृज्य वत्सं शाखयोपस्पृशति वायव स्तेति ... देवो व इति मातृणामेकां व्याकृत्य।**] Other texts use *apā-kṛ* in the same context. [E.g., BhVŚS 1.2.12: **तया ... वत्सानपाकरोति वायव स्थोपायव स्थेति।** (TS 1.1.1.1), ĀpŚS 1.2.3: **वायव स्थोपायव स्थेति ... वत्सानपाकरोति।**]

b. In the Vājasaneyisaṁhitā it is said that Prajāpati saw the different forms (*dṛṣṭvā rūpé*) of what is true and false, and discriminated the true and the false (*vyākarot satyānṛté*). He put faith in the first, lack of faith in the second. [VS 19.77: **दृ॒ष्ट्वा रू॒पे व्याक॑रोत्सत्यानृ॒ते प्र॒जाप॑तिः। अश्र॑द्धामनृ॒तेऽद॑धाच्छ्र॒द्धाँ स॒त्ये प्र॒जाप॑तिः।**] Here, *vy-ā-kṛ* signifies the act of discriminating, differentiating between two things. The verb is frequently used of keeping apart two things. For example, in the Śatapathabrāhmaṇa, the Upāṁśu and Antaryāma libations are said to be the prāṇa and udāna breaths of the Soma rite. One makes these libations at different times: the Antaryāma when the sun has risen, the Upāṁśu before it rises. This is

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done in order to set the prāṇa and udāna apart (*prāṇodānayor vyākṛtyai*): One thereby sets apart the prāṇa and udāna breaths (*prāṇodānāveevaitad vyākaroti*). In addition, the two libations mentioned are are said to be day and night connected with the Soma rite, so that one is offered when the sun has risen, the other before then. This is done to set apart day and night; one thereby sets these apart. [ŚBr. 4.1.2.11-12: **प्राणोदानौ ह वा अस्यैतौ ग्रहौ। तयोरुदितेऽन्यतरं जुहोत्यनुदितेऽन्यतरम् प्राणोदानयोर्व्याकृत्यै। प्राणोदानावेवैतद्व्याकरोति। तस्मादेतौ समानावेव सन्तौ नानेवाचक्षते प्राण इति चोदान इति च। अहोरात्रे ह वा अस्यैतौ ग्रहौ। तयोरुदितेऽन्यतरं जुहोत्यनुदितेऽन्यतरमहोरात्रयोर्व्याकृया अहोरात्रे एवैतद्व्याकरोति॥**] The text cited uses *vyākaroti*; in his commentary on ŚBr. 4.1.2.11, Sāyaṇa appropriately paraphrases this with *vibhaktau karoti* 'makes separate': One makes the two breaths separate through this difference in time. **[अनेन हि कालभेदेन तावुभौ विभक्तौ करोति।]**

Now, night and day are absolutely distinct. The breaths called *prāṇa* and *udāna*, however, are not. They are both upward moving breaths, and differ only in that the first is said to move in the mouth and nose, up to the areas of the heart, and navel, while the udāna operates up to the top of the head. [E.g., YSBh. on YS 3.39 (p. 162): **प्राणो मुखनासिकागतिरा-हृदयवृत्तिः ... उन्नयनादुदान आशिरोवृत्तिः।** See also the Tattvavaiśāradī and Nāgeśa's comments on this.] Hence, in the passage just cited from the Śatapathabrāhmaṇa, the text says: Therefore, one calls these two by different names, *prāṇa* and *udāna*, as though they were distinct (*nānevācakṣate*), although they are absolutely similar (*samānāveva santau*). In addition, *vy-ā-kṛ* is used with reference to one single entity, which was not previously differentiated, becoming or being made

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differentiated. For example, the Bṛhadāraṇyakopaniṣad speaks of this world being at one time undifferentiated (*avyākṛtam*), then becoming differentiated (*vyākriyata*) according to name and form, such that one could speak of individual entities bearing certain names and having certain forms or colors, and it is now thus differentiated (*vyākriyate*). [BĀU 1.4.7: **तद्धेदं तर्ह्यव्याकृतमासीत् नामरूपाभ्यामेव व्याक्रियतासौ नामायमिदंरूप इति। तदिदमप्येतर्हि नामरूपाभ्यामेव व्याक्रियतेऽसौ नामायमिदंरूप इति ...**]

Further, *vy-ā-kṛ* can signify the act of dividing. For example, the Śatapathabrāhmaṇa relates that Indra and Viṣṇu once divided up a thousand cows three ways. One was left over, so that they created from her three cows of different sorts. Even today, concludes the text, if one divided (*vyākuryāt*) a thousand three ways, there would be one left over. [ŚBr. 3.3.1.13: **सा या बभ्रुः पिङ्गाक्षी सा सोमक्रयणी। यत्र वा इन्द्राविष्णू त्रेधा सहस्रं व्यैरयेतां तदेकात्यरिच्यत। तां त्रेधा प्राजनयताम्। तस्माद्योऽप्येतर्हि त्रेधा सहस्रं व्याकुर्यादेकैवातिरिच्येत।**]

c. *vy-ā-kṛ* is also used in the sense of explaining, making something clear. Thus, in the Udyogaparvan of the Mahābhārata, Sanatsujāta teaches Dhṛtarāṣṭra that a true sage is called *vaiyākaraṇa* because he makes all things clear (*sarvārthānāṁ vyākaraṇāt*). [MBh. 5.43.36ab: **सर्वार्थानां व्याकरणाद्वैयाकरण उच्यते।**] In his commentary on this passage (5.43.61ab in the Citraśālā edition), Nīlakaṇṭha glosses *vyākaraṇāt* with *prakaṭīkaraṇāt* 'because of making clear'.

This use of *vy-ā-kṛ* also appears in more specifically grammatical discussions. Consider first what Bhartṛhari says in his commentary on a passage from the Paspaśā where Patañjali completes the discussion of what one should consider

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a word to be. The word (*śabdaḥ*) *go* 'cow, ox', he says, is that which, when uttered (*yenoccāritena*), serves as a means whereby there is a comprehension (*sampratyayo bhavati*) of things with a dewlap, a tale, a hump, hooves, and horns. [Bh. I.1.10-11: **येनोच्चारितेन सास्नालाङ्गूलककुदखुरविषाणिनां सम्प्रत्ययो भवति स शब्दः।**] Immediately after this, however, he goes on to remark that *śabda* is a term whose meaning is known (*pratītapadārthakaḥ*) in the world of every day usage (*loke*), where a sound (*dhvaniḥ*) is called *śabda* (*dhvaniḥ śabda ity ucyate*), as when someone says *śabdaṁ kuru* 'Make a sound', *mā śabdaṁ kārṣīḥ* 'Don't make a sound. Don't make noise'. [Bh. I.1.11-13: **अथवा प्रतीतपदार्थको लोके ध्वनिः शब्द इत्युच्यते। तद्यथा शब्दं कुरु मा शब्दं कार्षीः ... तस्माद् ध्वनिः शब्दः।**] In his commentary on this passage, Bhartṛhari contrasts a vyākaraṇa ('explanation') and an apākaraṇa ('rejection') in the context of questions and answers. Suppose A asks B, 'How many sons do you have?' (*kati bhavataḥ putrāḥ*). If, now, B does have sons, he can answer this question regarding the number of sons by explaining that he has one, two, or many sons. On the other hand, if B has no sons, he can reject the question as inapplicable, saying 'I have none at all' (*eko'pi me nāsti*), meaning thereby that the question concerning the number of sons should not be asked at all (*apākaroty eva praśnam naivāyaṁ praṣṭavyaḥ*). [Dīpikā 4.11-14: **किमर्थं पुनरिदमुच्यते। निर्णयस्य व्याकरणापाकरणाभ्यां प्रकरणप्रवृत्तिदर्शनात्। तद्यथा कति भवतः पुत्रा इति ... संख्यामुपादाय प्रश्ने कृते तस्य निर्णयो व्याकरणेनापाकरणेन वा। कश्चिदाह एको द्वौ बहव इति। एकोऽपि मे नास्ति। अयमपाकरोत्येव प्रश्नम् नैवायं प्रष्टव्य इति।** I have adopted the reading *praśne kṛte* of Swaminathan's edition instead of *prakṛtā* of Abhyankar and Limaye's edition.] The first answer

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is an explanation (*vyākaraṇa*), the second a rejection (*apākaraṇa*). Indeed, *vy-ā-kṛ* is used in the sense of giving an explanation in response to questions, and in this meaning the verb can be construed with forms of *praśna*. Thus, for example, Yāska gives *kathaṁ hi vyākariṣyati* 'How indeed will he ...?' to illustrate the use of the particle *hi* with the connotation of envy, not tolerating another, detracting from a person (*asūyāyām*, Nir. 1.5: **कथं हि व्याकरिष्यति इत्यसूयायाम्**). Skandaswamin-Maheśvara's commentary explains as follows (1.62) : Some one tells another person, 'Devadatta will ... questions in the assembly', to which the person thus addressed, intolerant of Devadatta, says 'How indeed will ..., since he lacks the knowledge?' **[असूया अक्षमा अमर्षः। देवदत्तः सभायां प्रश्नान्व्याकरिष्यतीत्युक्त अक्षममाणः कश्चिदाह कथं हि व्याकरिष्यत्यकृतविद्य इति।]** The commentary uses *praśnān vyākariṣyati* 'will informatively answer questions'.

In the Bhāṣya on Yogasūtra 3.17, Vyāsa explains that one has to separate out padas in utterances and each such abstracted pada is to be explained (*vyākaraṇīyam*), showing whether it signifies an action or a kāraka (*kriyāvācakaṁ vā kārakavācakaṁ vā*, see 214). Otherwise, if this were not done, Vyāsa goes on to say, how could a word like *bhavati, aśvaḥ*, or *ajāpayaḥ* be explained (*vyākriyeta*) as signifying an act or a kāraka, since the nominal forms *bhavati* (voc. sg. fem., as in (15) [see 218, 226]), *aśvaḥ* (nom. sg.) 'horse', *ajāpayaḥ* 'goat's milk', and the verb forms *bhavati* 'is, becomes', *aśvaḥ* (2sg. aor.), 'reached', *ajāpayaḥ* (2sg. impfct. caus. of *ji*, see A 6.1.48 [392]) are homophonous (*nāmākhyātasārūpyāt*), so that what they refer to is not known from their forms alone. [YSBh. 146: **तत्र वाक्ये पदपदार्थाभिव्यक्तिस्ततः पदं प्रविभज्य व्याकरणीयं क्रियावाचकं वा कारकवाचकं वा। अन्यथा भवत्यश्वोजापय इत्येवमादिषु नामाख्यातसारूप्यादनिर्ज्ञातं कथं**

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क्रियायां कारके वा व्याक्रियेतेति। On such ambiguous forms see also Kumārila's Ślokavārttika, Vākyādhikaraṇa 169-178.] That is, a grammatical explanation such as found in Pāṇini's Aṣṭādhyāyī shows the differences among these by deriving homophonous padas in different ways: The vocative *bhavati* is derived from *bhavatī-s* (see A 6.1.69, 7.3.107 [467, 483]), but the present form *bhavati* is derived from *bhū-a-ti* (see A 3.1.68, 7.3.84, 6.1.78 [157, 127, 524]); *aśvaḥ* 'horse' is derived from *aśva-s*, in which the ending *su* (A 2.3.46 [240]) follows the nominal base *aśva*, but the aorist form *aśvaḥ* is derived from the verb *śvi*, with the vikaraṇa *aṅ* and the verb ending *s* (<*sip*); *ajāpayaḥ* referring to an object is derived from *ajāpayas-am* (see A 7.1.23 [495]), but the verb form *ajāpayaḥ* is derived from *ajāp-i-a-s*. When Vyāsa uses *vyākaraṇīyam* with reference to such padas, he clearly means they are to be explained through such grammatical derivation on the basis of posited bases, affixes, and augments. And Vācaspatimiśra explicitly glosses *vyākaraṇīyam* with *anvākhyeyam* 'to be explained'. [Tattvavaiśāradī p. 146.14-15: ... तत्पदं प्रकृत्यादि-विभागकल्पनया व्याकरणीयम् अन्वाख्येयम्।]

d. A very famous passage from the Taittirīyasaṁhitā relates that speech (*vāk*) used to be undifferentiated (*avyākṛtā*). The gods asked Indra to make their speech differentiated (*imāṁ no vācaṁ vyākuru*). Indra then entered this speech and differentiated it (*tāṁ ... vyākarot*), whence it is that this speech we use is uttered differentiated (*tásmād iyáṁ vyākṛtā vāg udyate*). [TS 6.4.7.3-4: वाम्वै परा॑च्य-व्या॑कृतावद॒त् ते दे॒वा इन्द्र॑मब्रुवन्नि॒मां नो॒ वाच॑ं व्याकु॒र्विति॒ ... तामिन्द्रो॑ मध्य॒तो॑ऽव॒क्रम्य॒ व्याक॑रो॒त्। तस्मा॑दि॒यं व्या॑कृ॒ता वागु॒द्यते ...] Sāyaṇa comments on this passage in his commentary on TS 1.4.4 (Vaidika Saṁśodhana Maṇḍala edition, 1.538). According to him, *vāk* refers here to speech in the

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form of Vedic mantras. At one time, this speech was 'turned away' (*párācī*) in that it could not be used effectively in ritual, since it behave staff-like, being unitary like the sound of the ocean. It lacked division into discrete parts such that a particular stretch is an utterance, which contains discrete padas that in turn have bases and affixes. Hence, this speech was manifested (*avadat* 'spoke') as an undifferentiated whole. Indra entered into it and split it up into such discrete parts. [येयं वैदिकमन्त्ररूपा वाक् सा पूर्वं पराची समुद्रघोषवदैक्यरूपेण दण्डायमाना तस्यां वाच्येतावदेकं वाक्यम् तस्मिन् वाक्येऽप्येतावदेकं पदम् तस्मिन् पदेऽपीयं प्रकृतिरयं प्रत्यय इत्येवं विभज्य सर्वतः करणं व्याकरणम् तद्रहितत्वादव्याकृतैवावदत् प्रवृत्ता। तामिन्द्रो मध्यतोऽवक्रम्य वाक्यादिरूपेण तत्र तत्र विच्छिद्य विभिन्नां कृतवान्।] As can be seen, Sāyaṇa here interprets *vyākaraṇa* as an action noun and links *vi* to a verb that is to be understood, namely *bhaj* (*vi-bhaj* 'divide': *vibhajya* 'after dividing'). That is, *vyākaraṇa* signifies the full division of speech into discrete parts.

e. Other texts also use *vācaṁ vy-ā-kṛ*, but with a meaning different from the one this has in the Taittirīyasaṁhitā passage just dealt with. For example, Aitareyāraṇyaka 2.6.1, Aitareyopaniṣad 5.1 considers identifying the self (*ātman*) with different faculties and organs: Is it that by which one sees (*yena vā paśyati*), or that by which one hears (*yena vā śṛṇoti*), or that by which one smells odors (*yena vā gandhān ā jighrati*) or that by which one ... speech (*yena vā vācaṁ vyākaroti*), or that by which one knows what is sweet from what is not sweet (*yena vā svādu cāsvādu ca vijānāti*)? [कोऽयमात्मेति वयमुपास्महे कतरः स आत्मा। येन वा पश्यति येन वा शृणोति येन वा गन्धानाजिघ्रति येन वा वाचं व्याकरोति येन वा स्वादु चास्वादु च विजानाति।] In the

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Aitareyabrāhmaṇa, the tenth day (*daśamam ahaḥ*) of a Soma rite is identified with various faculties and organs: First, it is identified with that by which one ... speech and that by which one knows what is sweet from what is not sweet (*atha yenaiva vācaṁ vyākaroti yena svādu cāsvādu ca vi jānāti tad daśamam ahaḥ*); then it is identified with that by which one has sensations of smells (*atha yenaiva gandhān vi jānāti*), with the pupil of the eye, that by which one sees (*atha yaiva kanīnikā yenaiva paśyati*), with that by which one hears (*atha yenaiva śṛṇoti*). [AiBr. 5.22: ... **अथ येनैव वाचं व्याकरोति येन स्वादु चास्वादु च विजानाति तद्दशममहः ... अथ येनैव गन्धान् विजानाति तद्ददममहः ... अथ यैव कनीनिका येन पश्यति तद्दशममहः ... अथ येनैव शृणोति तद्दशममहः। ...**] Clearly, the first passage concerns the possible identification of the self with sight, hearing, smelling, speech, and taste, together with the organs that function in seeing, hearing, and so on, and the second passage concerns the identification of the tenth day with these, as commentators have noted. The most immediate and obvious interpretation of *yena* (*yenaiva*) *vācaṁ karoti*, then, is 'that by which one utters speech', and in his commentary on the Aitareyabrāhmaṇa passage, Sāyaṇa indeed glosses *vācaṁ vyākaroti* with *śabdam uccārayati* 'utters sound'. **[येनैव वागिन्द्रियेण वाचं व्याकरोति शब्दमुच्चारयति।]** This is compatible with the uses of *vy-ā-kṛ* illustrated in **c**.

On the other hand, in his commentary on AiU 5.1, Śaṅkara takes *vācaṁ vyākaroti* to refer to discriminating between correct and incorrect speech items, in particular nominal forms like *gauḥ* 'cow, ox', *aśvaḥ* 'horse'. **[येन वा वाक्करणभूतेन वाचं नामात्मिकां व्याकरोति गौरश्व इत्येवमाद्यां साध्वसाध्विति च।]** This is compatible with uses of *vy-ā-kṛ* illustrated under **b**.

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848 The passage from the Taittirīyasaṁhitā considered in 847d shows *vy-ā-kṛ* meaning 'divide, differentiate' and has speech as the object of this action. It is also certain that at one time early Indian grammarians did indeed analyze utterances and words to arrive at components. It is equally certain that such analysis, reflected in padapāṭhas such as the one elaborated by Śākalya for the Ṛgveda, had already been carried out before Pāṇini's time (cf. 709). Pāṇini's Aṣṭādhyāyī patently does not serve as a means for analyzing words and utterances. On the contrary, this grammar assumes as given particular basic forms of bases and affixes and serves to derive padas and utterances from these. As a śabdānuśāsaṇa, the Aṣṭādhyāyī is a means of explaining utterances and their component padas through a derivational system. As can be seen from the very term *śabdānuśāsana,* the object of this explanation is correct speech forms (see 845). Since, *śabdānuśāsana* and *vyākaraṇa* are equivalent terms, then, the object of the action denoted by *vy-ā-kṛ* also is correct speech forms. This is made explicit in the Yogasūtrabhāṣya passage considered in 847c. Moreover, the Mahābhāṣya on Paspaśā vārttika 12 says, in the text adopted in the Nirṇayasāgara Press edition (I.78a) and the Rohatak edition (I.44), that a vyākaraṇa is that by means of which correct speech forms are explained (व्याक्रियन्ते शब्दा अनेनेति व्याकरणम्). To be sure, in Kielhorn's edition the reading *vyākriyate'neneti vyākaraṇam* is accepted (see 850b), and this is supported by manuscripts, but there can be no doubt whatever, in view of the evidence considered, that the object of the action signified by *vy-ā-kṛ* is correct speech forms, and the variant reading indeed is found in other testimonia (e.g., Nyāyasudhā III.269: न सूत्रस्य व्याकरणत्वं युक्तं नापि शब्दस्य व्याक्रियन्ते शब्दा अनेनेति व्याकरणमिति ल्युडर्थानुपपत्तेः ...).

These speech forms are also said to be set apart from incorrect ones (see 845). Indeed, although commentators

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attribute the meaning 'teaching after discriminating' to *anu-śās* (e.g., PM I.7-8: **अनुपूर्वो हि शासिर्विविच्य ज्ञापने दृष्टः।**, similarly ŚK I.3) and support this with textual references, the meaning 'discriminate' is more easily directly attributed, in the present context, to *vy-ā-kṛ*, as can be seen from passages such as those considered in **847b**.

In brief, a grammar (*vyākaraṇa, śabdānuśāsana*) such as Pāṇini's is traditionally viewed as a meanings of explaining, making known (*vy-ā-kṛ*, *anu-śās*), through a derivational system, correct speech forms (*śabda*) as discriminated from incorrect speech forms.

849 Grammar is a śāstra (see **827**). Now, *śāstra* can be used with reference to any teaching, as, for example, when the Bhagavadgītā uses *guhyatamaṁ śāstram* 'most secret teaching' with reference to what Kṛṣṇa teaches. [Gītā 15.20ab: **इति गुह्यतमं शास्त्रमिदमुक्तं मयानघ।**] More specifically, *śāstra* is used of a consecrated number of teachings, including grammar. For example, in his Uṇādikośa on Uṇādisūtra 4.158 (**827**), Mahādeva says *śāstra* refers to the revealed lore (*śruti*), that is, the Veda, to man-made lore (*smṛti*), the Purāṇas, and the six philosophical systems of Nyāya and so on. [Uṇādikośa verse 653ab: **श्रुतिस्मृतिपुराणेषु शास्त्रं न्यायादिषट्स्वपि।**] Grammar is traditionally reckoned among the smṛtis, as the one which teaches correct speech. [e.g., VP 1.29cd: **तस्मान्निबध्यते शिष्टैः साधुत्वविषया स्मृतिः।** (cf. 1.43), 1.158: **साधुत्वज्ञान-विषया सेयं व्याकरणस्मृतिः। अविच्छेदेन शिष्टानामिदं स्मृतिनिबन्धनम्॥**] *śāstra* can also refer to a particular work. For example, in his vārttika on Nyāyasūtra 1.1.1, Uddyotakara explains the composition of Gautama's work, which is a śāstra. The śāstra is a group of words characterized by a particular arrangement (*vyūhaviśiṣṭaḥ*) and stating such things as means of knowing rightly

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(*pramāṇādivācakapadasamūhaḥ*). A word (*padam*) is a group of sounds (*varṇasamūhaḥ*), and a group of words constitutes a sūtra; a group of sūtras makes up a section (*prakaraṇam*); a group of sections constitutes an āhnika; a group of āhnika makes up a chapter (*adhyāyaḥ*); and the śāstra is a group of five chapters (*pañcādhyāyī*). [NV I.6.5-7: **शास्त्रं पुनः प्रमाणादिवाचकपदसमूहो न्यूहविषिष्टः। पदं पुनर्वर्णसमूहः। पदसमूहः सूत्रम्। सूत्रसमूहः प्रकरणम्। प्रकरणसमूह आह्निकम्। आह्निकसमूहोऽध्यायः। पञ्चाध्यायी शास्त्रम्।**] Pāṇini's śabdānuśāsana also is referred to as a śāstra (see 827).

In addition, individual sūtras of the Aṣṭādhyāyī are called *śāstra*. Thus, in the Bhāṣya on A 1.1.1, Patañjali says that the teacher Pāṇini, intent on auspiciousness, uses *vṛddhi*--- which in ordinary usage means 'growth' --- at the beginning of the great multitude of śāstras (*mahataḥ śāstraughasya*) for the sake of auspiciousness, and Nāgeśa rightly notes that Patañjali here speaks of a multitude of śāstras because each single sūtra is a śāstra. [Bh. I.40.6-7: **माङ्गलिक आचार्यो महतः शास्त्रौघस्य मङ्गलार्थं वृद्धिशब्दमादितः प्रयुङ्क्ते।**, Ud. I.132: **एकैकं सूत्रं शास्त्रमिति शास्त्रौघस्येत्युक्तम्।**]

850 As was shown in 849, *sūtra* refers to an individual statement in a treatise such as Gautama's work on Nyāya or Pāṇini's grammar. Indeed, Patañjali explicitly speaks of a sūtra of a grammar: *vyākaraṇasya sūtram* (e.g., Bhāṣya I.11.17, see a below). Accordingly, *vaiyākaraṇa* 'one who studies or knows vyākaraṇa' (see A 4.2.59 [337]) can refer to some one who is studying individual statements of the grammar. In addition, however, *sūtra* can be used with reference to an entire work such as the Aṣṭādhyāyī. In this context, it is worthwhile to consider briefly a discussion in the Paspaśā concerning what *vyākaraṇa* denotes.

a. The first position taken is that *vyākaraṇa* refers to the

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entire corpus of sūtras. This meets with two objection, the first of which is as follows. The meaning of a sixth-triplet ending, as in *vyākaraṇasya* of *vyākaraṇasya sūtram,* is now not justified. Such an ending signifies a relation between two distinct entities (see A 2.3.50 [251]). What, then, would that vyākaraṇa be, distinct from the sūtra, to which the sūtra would be related? [Bh. I.11.15, Paspaśā vt. 10, Bh.I.11.17-18: **अथ व्याकरणमित्यस्य शब्दस्य कः पदार्थः। सूत्रम्। सूत्रे व्याकरणे षष्ठ्यर्थोऽनुपपन्नः॥१०॥ सूत्रे व्याकरणे षष्ठ्यर्थो नोपपद्यते व्याकरणस्य सूत्रमिति। किं हि तदन्यत्सूत्राद् व्याकरणं यस्यादः सूत्रं स्यात्।]** The objection is obviously based on assuming that *sūtra* refers to the entire set of sūtras that constitutes the Aṣṭādhyāyī. If, on the other hand, *sūtra* referred to part of this text, any individual rule, the objection would not be valid. [Pr. I.43: **षष्ठ्यर्थ इति। द्वाभ्यामपि शब्दाभ्यामष्टाध्याय्याः प्रतिपादनाद्व्यतिरेकाभावः। ... यदा त्वष्टाध्याय्येकदेशः सूत्रशब्देनोच्यते तदा षष्ठ्यर्थोऽप्युपपद्यतेः।,** Dīpikā 38.23-39.1: ... **यदा तु व्याकरणशब्दः समुदायवृत्तिः सूत्रशब्दः कस्मिंश्चिदवयवे वृत्त उपादीयते ... तदा षष्ठ्यर्थोऽप्युपपन्नः।]** *sūtra* referring to the entire corpus of rules is also used in the Mahābhāṣya passage considered below, under **b.**

b. It is then suggested that *vyākaraṇa* denotes the correct speech (*śabdaḥ*) that is described. This meets with two sorts of objections. To begin with, the term *vyākaraṇa* is then not properly accounted for by the grammar: *vyākaraṇa* should be derived with the suffix *lyuṭ* introduced to signify an instrument, and this meaning is now not justified. That is, *vyākaraṇa* should refer to something by means of which one explains, and the correct speech forms to be accounted for are not such a means; what serves to explain is a set of sūtras, by

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means of which correct speech forms are accounted for. [Bh. I.11.24, Paspaśā vt. 12, Bh. I.11.26-27: **एवं तर्हि शब्दः। शब्देल्युडर्थः॥१२॥ यदि शब्दो व्याकरणं ल्युडर्थो नोपपद्यते व्याक्रियतेऽनेनेति व्याकरणम्। न हि शब्देन किञ्चिद् व्याक्रियते। केन तर्हि। सूत्रेण।** See 848 for a variant reading.] In addition, under the proposed interpretation, two types of derivates with taddhita suffixes are not justified. One should have *vaiyākaraṇa,* with the affix *aṇ,* in the sense of 'located in ...' (*tatra bhavaḥ*: A 4.3.53 [344]), so as to account for a usage like *vaiyākaraṇo yogaḥ* with reference to a rule (*yogaḥ*) located in the vyākaraṇa (*vyākaraṇe bhavo yogaḥ*). But a rule is located in the corpus of rules (*sūtre*), not in the correct speech described by this set of rules. Moreover, a meaning 'enunciated, propounded by ...' (*tena proktam*: A 4.3.101) for the suffixes in *pāṇinīyam, āpiśalam* ('enunciated by Āpiśali'), *kāśakṛtsnam* ('enunciated by Kāśakṛtsna') is not justified under the proposal being considered: Pāṇini did not enunciate the correct speech forms he described; he enunciated the corpus of rules that account for such forms. [Paspaśā vt. 13, Bh. I.12.1-2, 5-6: **भवे प्रोक्तादयश्च तद्धिताः॥१३॥ भवे च तद्धितो नोपपद्यते। व्याकरणे भवो योगो वैयाकरण इति। न हि शब्दे भवो योगः। क्व तर्हि। सूत्रे। प्रोक्तादयश्च तद्धिता नोपपद्यन्ते। पाणिनिना प्रोक्तं पाणिनीयम् आपिशलम् काशकृत्स्नमिति। न हि पाणिनिना शब्दाः प्रोक्ताः। किं तर्हि। सूत्रम्।**]

c. Finally, the suggestion is made that the speech which is to be characterized by rules of the grammar and these rules (*lakṣyalakṣaṇe*) together constitute what *vyākaraṇa* refers to. [Paspaśā vt. 14, Bh. I.12.16: **लक्ष्यलक्षणे व्याकरणम्॥१४॥ लक्ष्यञ्च च लक्षणञ्चैतत्समुदितं व्याकरणं भवति।**] Patañjali

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goes on first to explain what *lakkṣya* and *lakṣaṇa* designate here: The correct speech is the lakṣya, and the corpus of rules is the lakṣaṇa. [Bh. I.12.16-17: **किं पुनर्लक्ष्यं लक्षणञ्च। शब्दो लक्ष्यः सूत्रं लक्षणम्।**] This suggestion also meets with an objection: The term *vyākaraṇa* now is considered to refer to two things together, so that, under the proposal made, it is not justifiably used with reference to one of these alone. Yet it is desirable that *vaiyākaraṇa* be used also of a person who is studying, learning only the sūtras, not also the speech these account for. [Bh. I.12.17-18: **एवमप्ययं दोषः समुदाये ऽयं व्याकरणशब्दः प्रवृत्तोऽवयवे नोपपद्यते। सूत्राणि चाप्यधीयान इष्यते वैयाकरण इति।**]

Patañjali goes on to argue that the faults brought up can be circumvented. In the present context, it is not necessary to consider these arguments. It is sufficient to have shown how pertinent terms are used in the Bhāṣya passages dealt with.

851 The term *sūtra,* which in ordinary Sanskrit means 'thread', is used, as shown, with reference to a rule or a corpus of rules. According to a traditional verse, a sūtra has the following characteristics: it has few syllables (*alpākṣaram*), without inserted meaningless, useless terms (*astobham*), and contains what is essential (*sāravat*), yet applies with reference to the most instances possible (*viśvatomukham*), and is not subject to doubt (*asandigdham*); it is without fault (*anavadyam*):

अल्पाक्षरमसन्दिग्धं सारवद्विश्वतोमुखम्।
अस्तोभमनवद्यञ्च सूत्रं सूत्रविदो विदुः॥

852 Patañjali speaks of a yoga found in the grammar (Bh. I.12.2 [850b]), that is, a rule within the corpus of rules that makes up the entire grammar. It is patent that *yoga* thus used refers to an individual rule of the grammar, a sūtra. Similarly, in his first vārttika on A 1.3.11 (115), Kātyāyana says (**अधिकार**:

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प्रतियोगं तस्यानिर्देशार्थः।) that a heading is formulated in order that one not have to state in rule after rule (*prati-yogam*) what is given in the heading, and he uses *yoga* to refer to individual rules.

853 The immediate object of a grammar like Pāṇini's is to describe correct speech forms (*śabda*), which are referred to as *lakṣya* (see 850c), that is, as "targets", which are to be characterized by means of grammatical rules. The rules that serve this purpose are, then, referred to as *lakṣaṇa*. According to Pāṇinīyas, a sūtra is called *lakṣaṇa* because it is that by means of which correct speech is characterized (*lakṣyate*), that is, explained (*anvākhyāyate*). [Darpaṇa 97: **लक्ष्यतेऽन्वाख्याययते साधुशब्दोऽनेनेति लक्षणं सूत्रम्।**]

As *sūtra* can refer to a corpus of rules, so can *lakṣaṇa*. In the Paspaśā, Patañjali considers and rejects the possibility that the grammar should teach correct speech forms individually. Instead, he says, a set of rules is to be set into play which contain what is general and particular --- that is, general rules and exceptions (*utsargāpavādau*, cf. 624) --- whereby one may, with a minimum of effort, obtain knowledge of great masses of correct speech forms. [Bh. I.6.3-4: **किञ्चित्सामान्यविशेषवल्लक्षणं प्रवर्त्य येनाल्पेन यत्नेन महतो महतः शब्दौघान्प्रतिपद्येरन्। किं पुनस्तत्। उत्सर्गापवादौ।**] There can be little doubt that *sāmānyaviśeṣaval lakṣaṇam* 'a lakṣaṇa with what is general and particular' here refers to the grammar in general. And indeed, the Vṛtti on VP 1.159 speaks not only of this lakṣaṇa which has what is general and particular but also says that it is a grammar (*asmiṃ lakṣaṇe vyākaraṇākhye*). [Vṛtti 221.4: **... सामान्यविशेषवत्यस्मिँल्लक्षणे व्याकरणाख्ये ...**]

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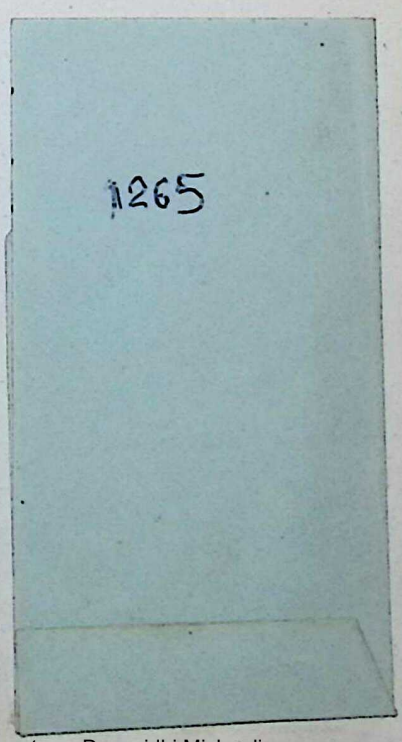

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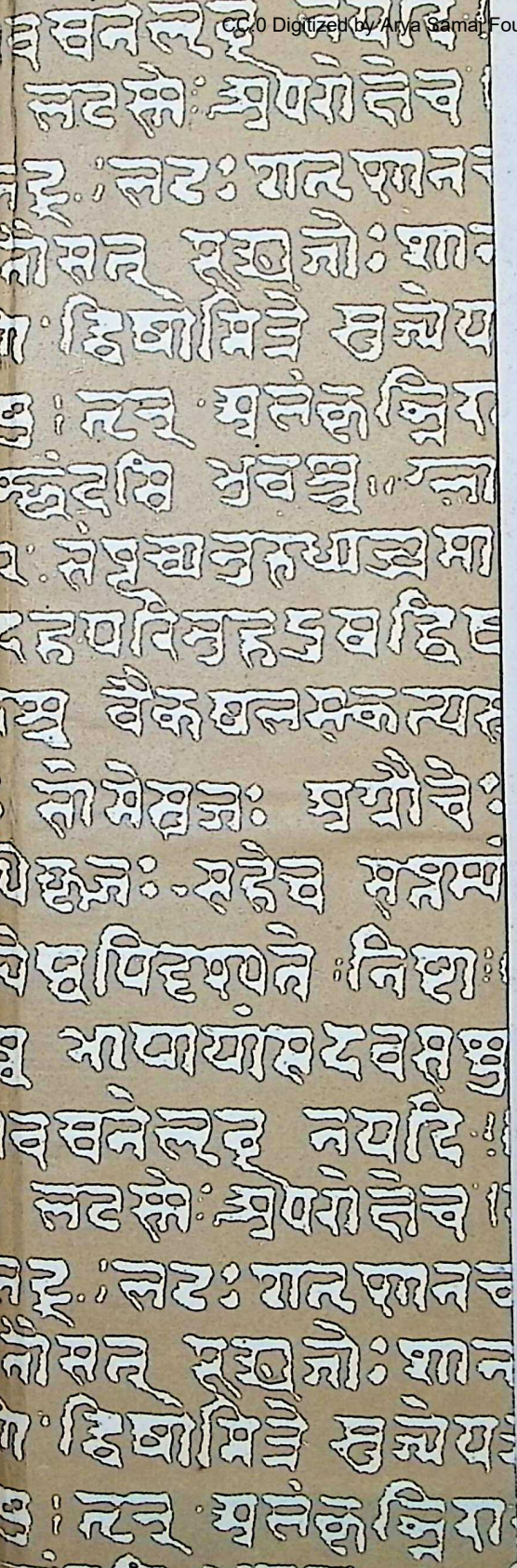

GEORGE CARDONA was born in New York city in 1936. With a doctorate in Linguistics, specializing in Indo-European, from Yale University in 1960, he studied Pāṇinian grammatical works in India, under Jagannath S. Pade Shastri, Ambika Prasad Upadhyaya, K. S. Krishnamurti Shastri and Raghunatha Sharma. Since 1960 he has taught at the University of Pennsylvania, where he is Professor of Linguistics. In addition, he has taught at several other universities, was a fellow of the Centre for Advanced Studies in the Behavioral Sciences, Palo Alto, in 1971-1972, and was the Collitz Professor at the summer institute of the Linguistic Society of America at the University of Illinois in 1978.

"He [George Cardona] combines in himse the erudition of modern Linguistics as well as the traditional Indian approach and brings to his contributions the insights so characteristic of Patañjali and Bhartṛhari."

—S. M. Katre, Professor Emeritus, University of Texas; Former Director, Deccan College, Poona.

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PĀṆINI
His Work and its Traditions
8 Volumes

GEORGE CARDONA
University of Pennsylvania

The complete study—*Pāṇini: His Work and its Traditions*—of which the present volume is the first part is planned as follows:

I. Background and introduction.
II. Kinds of rules in the Aṣṭādhyāyī and how they are related.
III. Metalanguage: III.1. Paribhāṣāsūtras III.2. Saṁjñāsūtras: Rules concerning general conventions and classes of elements other than markers or kārakas (Appendix: Sound classes recognized in prātiśākhya and śikṣā works) III.3. Saṁjñāsūtras: Markers III.4. Saṁjñāsūtras: kāraka classes.
IV. Affixation rules: IV.1. Verbal affixes IV.2. Nominal affixes.
V. Formation of derived bases: V.1: Derived verbs V.2. Derived nominals: V.2.1. Derivates with kṛt affixes V.2.2. Compounds V.2.3. Derivates with taddhita affixes.
VI. Rules providing for augments, replacements, and accentuation: VI.1. Verb suppletion VI.2. Iterating padas VI.3. Base and affix substitution and augmenting VI.4. Background for Pāṇini's phonological sūtras; Prātiśākhya rules VI.5. Sound replacement in general VI.6. Accentual rules.
VII. Pāṇinian sūtras concerning dialects: VII.1. Vedic rules VII.2. Others.
VIII. Syntax and stylistics of the Aṣṭādhyāyī: VIII.1. Syntax of sūtras VIII.2. Stylistics III.3. Terminology.

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